FOR RICHER FIELDS

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sticide Output egisters Gain First Quarter

Volume of Exports Down, But Dollar Value Shows Increase

ASHINGTON — Production of ticides in the U.S. for the first ee months of 1955 followed the eral upward trend noted in the put of all chemicals, according to eport just issued by the Business l Defense Services Administration, S. Department of Commerce.

Output of DDT in January and bruary this year, was 27% above at in the first two months of 1954; e manufacture of 2,4-D during this me period of 1955 was 34% above at of January and February of 54; and production of 2,4,5-T alost doubled compared to a year o, the report says.

BHC production, however, declined some 40% in this two-month period, the Department of Commerce indicates. Output for this period of 1955 was 384 tons as compared to 667 last year.

DDT (actual) was up, however, with 9,339 tons being produced in anuary-February, 1955, as compared o 7,368 tons last year.

Exports of the 14 classifications of esticides recorded by the Bureau of Census (16,846,000 lb.) were 13% be-

(Continued on page 8)

Woodbury Chemical to Increase Common Stock

ST. JOSEPH, MO.—The board of directors of Woodbury Chemical Co. here has authorized an increase in the firm's common stock to $1,000,000.

H. A. Woodbury, president of the company, also has announced that two of the firm's executives have taken over new duties. Richard W. Douglas has been named vice president, and Leonard R. Everett now is secretary.

In addition to its main office and plant at 702 So. 4th St., the company operates a weed killer plant at 4th and Locust Sts. and an agricultural insecticide, fumigant and liquid fertilizer plant at 4th and Seneca Sts., all in St. Joseph.

NPFI CONVENTION IN SESSION

WHITE SULPHUR SPRINGS, VA.—The preliminary meeting of the National Plant Food Institute began today at the Greenbrier Hotel here. Attendance is expected to set a record. Speakers include representatives of the industry, government and members of legislative bodies. The National Plant Food Institute is being formed through the consolidation of the National Fertilizer Assn. and the American Plant Food Council. Headquarters for the new group will be Washington, D.C. Full report of this week's meeting will be in Croplife's issue of June 20.

Super Production, Shipments Show Increase in 1954

WASHINGTON — Production of superphosphate in 1954 totaled 2,214,710 short tons of available phosphoric acid, compared with 2,147,462 short tons during 1953, according to the Bureau of the Census, U.S. Department of Agriculture.

Production in 1954 (with compara-

(Continued on page 20)

$100,000 Requested For Massachusetts Looper Moth Control

BOSTON—Gov. Christian A. Harter has sent a special message to the Massachusetts Legislature asking for $100,000 to spray Cape Cod and wipe out the looper moths that have recently developed and threaten to strip all pine trees.

Action was taken by the governor upon receiving a warning from Arthur T. Lyman, commissioner of the State Department of Natural Resources, that the pine caterpillars were now a worse hazard on the Cape than the gypsy moth. In the message asking the emergency appropriation, the governor said:

"The Commissioner of Natural Resources estimates that some 200,000 acres are affected and that it would cost approximately 50¢ per acre to do an effective spraying program which should care for the situation for many years to come."

4 Million-Ton Output Of Nitrogen Can Be Used, USDA Says

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON—Prospects that U.S. production of synthetic nitrogen may reach a tonnage in excess of four million tons by Jan. 1, 1957, is a real statistical goal, according to government officials speaking this week to Croplife. They agree that recent reports attributed to USDA are correct in totals reported, but they cite some broad qualifications which tend to reserve judgment on the surface acceptance of this data.

Starting with the incentive programs for synthetic nitrogen expansion stimulated by the Office of Defense Mobilization, these officials believe that—outside the emergencies of war—it would have been more appropriate to leave production expansion determinations to the synthetic nitrogen industry itself. In reaching that conclusion they give examples of West Coast nitrogen producers who are now backing away from plant expansion under ODM incentives as they see competitors lowering prices to a point wherein even the tax amortization incentive is not too attractive.

Cold statistical data would show that if the present trend were to be maintained and all prospective new synthetic nitrogen facilities were built, there would be a production potential of slightly more than 4 million tons annually by Jan. 1, 1957.

That production potential was stimulated prior to the coming of the petroleum industry into the anhydrous ammonia field. Output from this source probably will not exceed 250,000 tons annually, but this production may be the straw that breaks the price-camel's back.

Many factors have conspired to develop unfavorable marketing conditions for the fertilizer industry—lateness of planting in many areas—reduction in acreage and the general pattern of uncertainty in the entire farm program—reduction in farm income and collateral influences which do not lead to farm enthusiasm to spend money.

But USDA sees no danger of any broad dips in fertilizer consumption nor any danger of price wars

(Continued on page 17)

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Nitrogen Price Reduction Forecast In British Report

LONDON — A forecast of a temporary reduction in the price of nitrogen has been made by the British firm of Aikman, Ltd., as a result of an examination of present world production trends and consumption.

The report, a regular half yearly publication of the Aikman firm, is accepted in world trade circles as an authoritative document. Noting recent production increases in the U.S., the firm suggests that the American producers may have to reduce their asking price on export markets in order to move the surplus now building up. This will be necessary because storage space in the U.S. is limited.

Demand for nitrogen in the U.S. was slow up to February but since

(Continued on page 20)

Inside You'll Find

Insect Notes	4
Over the Counter	9
Field Notes	9
Oscar and Pat	10
What's New	14
World Report	18
Meeting Memos	19
Editorials	22
Index of Advertisers	23

16-Year Test Proves Pesticides Increase Cotton Yield

See Table Page 20

WASHINGTON, D.C. — The high value of controlling cotton insects with chemical insecticides has been clearly demonstrated throughout 16 years of experiments at Waco, Texas, the U.S. Department of Agriculture reports. In tests at Waco since 1939, treated cotton fields produced almost 40% more seed cotton than untreated.

Entomologists of USDA's Agricultural Research Service believe these experimental results are directly applicable to the Central Texas cotton-growing region, and also to much of the country's non-irrigated Cotton Belt.

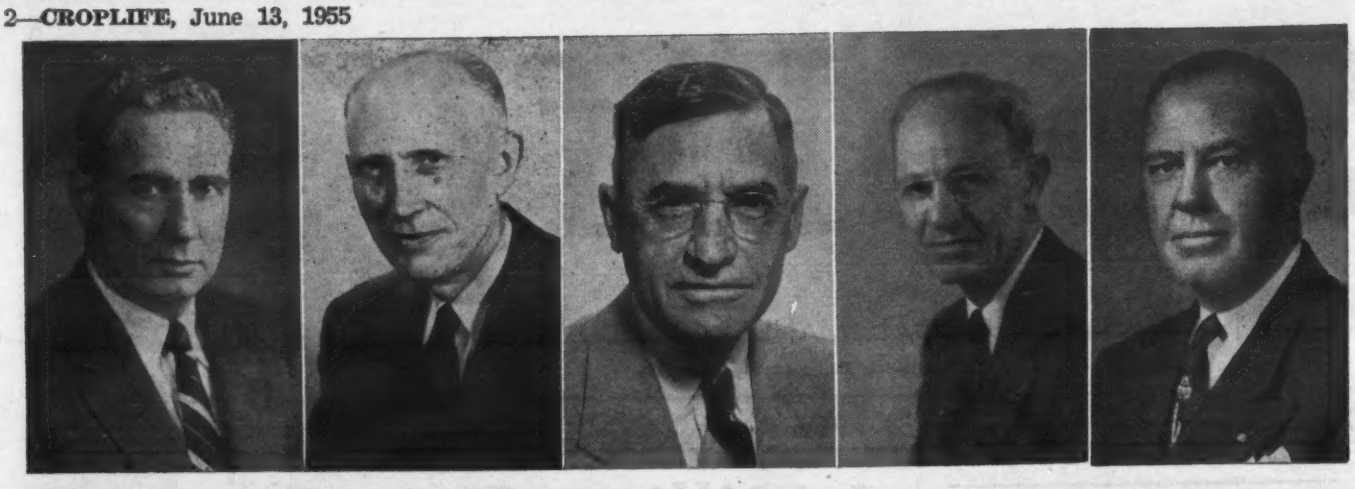
Sixteen consecutive years of comparing insecticide-treated with untreated plantings on a total of nearly 6,000 acres resulted in yield averages of 1,003 lb. seed cotton an acre for treated fields and 719 lb. for untreated fields.

Use of insecticides resulted in higher yields during every year of the tests. The lowest increase—9.9%—was registered in 1939; the highest was a 157% increase in 1946.

Entomologist C. R. Parencia, in charge of the Waco Cotton Insect Laboratory, notes that prior to 1945, when inorganic insecticides such as arsenicals were relied on for insect control, the average yield increase from treatment was 33½%. But since 1945, and the advent of organic chemical insecticides, the average yield increase due to treatment has been nearly 53%.

Similar information released last year from USDA's Tallulah, La., Cotton Insect Laboratory showed that, over a 34-year period of field experiments at that station, insecticidal control increased average yields by 25.5%. However, since 1939, the average increase due to insect control at Tallulah has been 50%.

K. P. Ewing, head of cotton-insect research for USDA's Agricultural Research Service, established the Waco laboratory in 1939 and directed its research until he was appointed to his present post in 1953. In 1949 the Waco laboratory staff received a Superior Service Award from the Secretary of Agriculture for outstanding contributions to cotton-insect control.



DISCUSS FERTILIZER-PESTICIDE MIXTURES—Here are the experts appearing on the panel discussion of fertilizer-pesticide mixtures at the preliminary meeting of the National Plant Food Institute at the Greenbrier, White Sulphur Springs, W. Va. Left to right: John D. Conner, Washington, D.C. attorney, counsel for the National Agricultural Chemicals Assn.; K. D. Jacob, head, Fertilizer and Lime Section, U.S. Department of Agriculture, Beltsville, Md.; M. V. Bailey, technical director, Agricultural Chemicals Div., American Cyanamid Co., New York, panel moderator; Rodney C. Berry, Virginia State Chemist, Richmond, Va.; and Charles T. Harding, general manager, Fertilizer Division, Virginia-Carolina Chemical Corp., Richmond, Va. A complete report of their remarks will be presented in the next issue of Croplife.

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Service Awards Presented to USDA Employees

WASHINGTON — Nine employe and two work units of the U.S. D partment of Agriculture recently ceived distinguished service awar and 119 employees and 19 work un were cited with superior servi awards.

Among those who received the d tinguished service award, highe USDA citation, were:

Dr. Gotthold Steiner, nematologi Agricultural Research Service, Bel ville, Md., "for advancing the fig against nematodes which cost Am ican farmers $500,000,000 a year crop damages."

Dr. Byron T. Shaw, agricultur research administrator, Washingto "for recognizing the nation's agricu tural research requirements and f his leadership in planning and execu ing it."

Livestock Insect Laboratory, AR Kerrville, Texas, "for developing a demonstrating the use of new a safe methods of controlling inse pests of livestock."

Several of the superior servic awards went to individuals an units for their accomplishments i agricultural chemistry. They are:

David G. Hall, ARS, Washingto "for developing an information pr gram during the centennial ye (1954) of professional entomolog that brought wide public understan ing of the threat of destructive i sects to our national welfare."

Dr. Lee M. Hutchins, Forest Ser ice, Washington, "for original r search on virus diseases of ston fruits and for inspiring effective lea ership of the department's researc on disease of forest and shade tre and forest products."

Clarence J. Kilgallen, ARS, Hick ville, N.Y., "for unusual foresight gaining public acceptance of difficu golden nematode quarantine regul tions necessarily imposed on the Lon Island potato industry . . ."

Wilfred D. Mills, Federal Extensio Service, Ithaca, N.Y., "for interpr tating detailed disease and pest co trol research which enabled grower to apply effective sprays to fruit tre at the proper time . . ."

Joseph N. Tenhet, Agricultur Marketing Service, Richmond, Va "for planning and conducting r search which developed methods f controlling stored tobacco insects . .

Dr. Frank G. Viets, Agricultur Marketing Service, Ft. Collins, Co "for assessing soil fertility needs irrigated lands in the Columbia Riv Basin, including diagnosing and d scribing zinc deficiency symptoms . . .

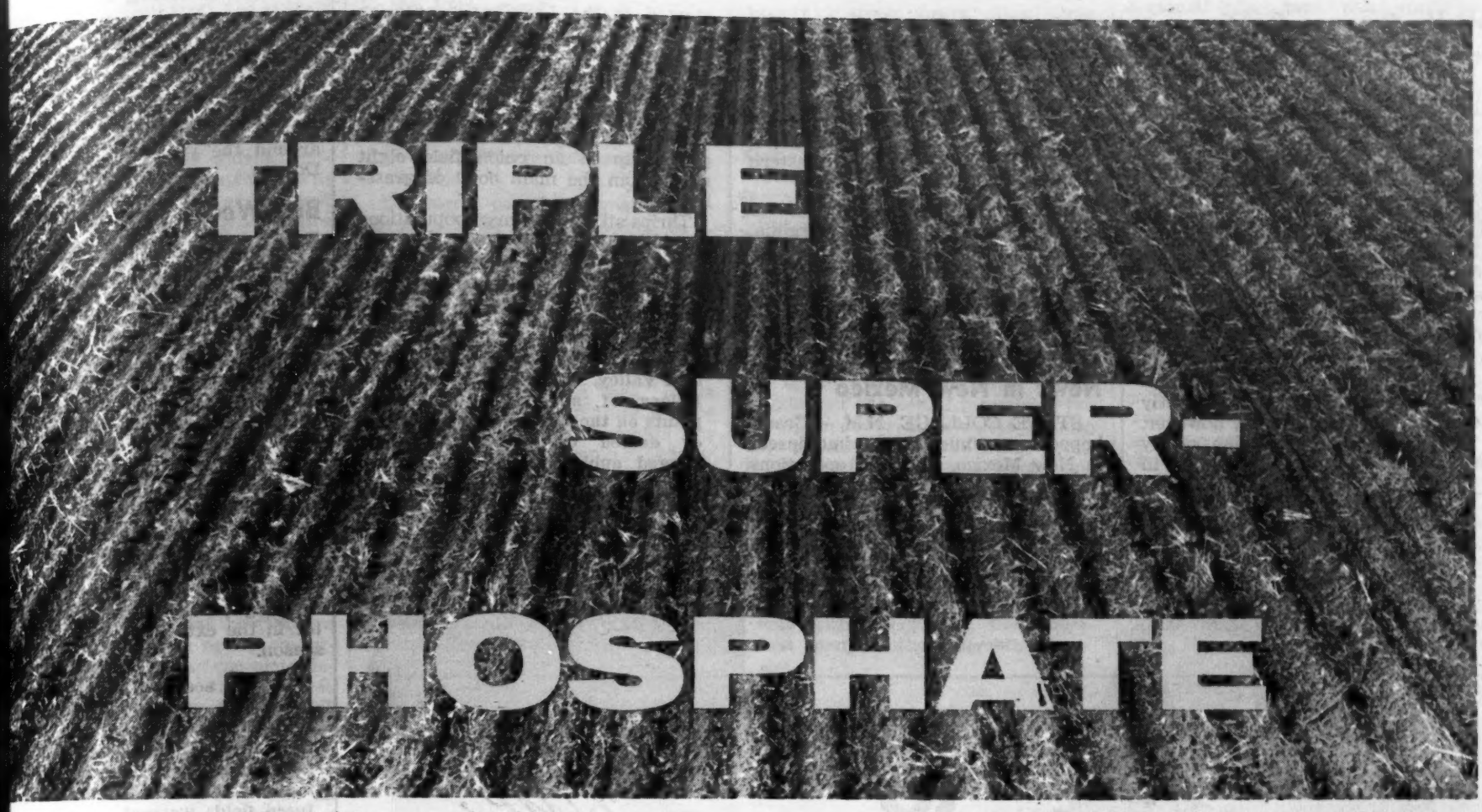
Robert L. Wallis, ARS, Scottsblu Neb., "for planning and conductin research which provided a metho now used for predicting potato psy lid outbreaks . . ."

Diptera Unit, ARS, Washingto "for research which has increased th knowledge of the two-winged fly an for applying such knowledge to th protection of agriculture and publi health against such insects."

Pine Butterfly Aerial Sprayin Project, Forest Service, Ogden, Uta "for superior planning, organizatio and safe execution of the 1954 Pin Butterfly Aerial Spraying Projec Boise National Forest . . ."

Cook Chemical Co. Purchases Building

KANSAS CITY—The Cook Chem ical Co. has purchased a building 25th and Summit streets that w serve as the firm's headquarters. Th company maintains production for i insecticides, grain fumigants an other products at another site her and at Baton Rouge, La. Ralph G Martin is president.



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INSECT, PLANT DISEASE NOTES

Alfalfa Damage Continues From Virginia Weevils

BLACKSBURG, VA.—Alfalfa weevils continue to make inroads in many parts of the state, stubble sprays have not kept infestations under control, and new growth is becoming reinfested. Entomologists suggest retreating fields if half or more of the plant tips are injured. Heptachlor, 0.15 to 0.25 lb. an acre; or lindane, 0.50 lb. an acre, are the suggested insecticides and dosages to use. Dieldrin at 0.18 lb. an acre gives good to excellent results and has a long residual effect.

Meadow spittlebug adults are now present in alfalfa fields. The unsightly masses will soon disappear, however.

Fall cankerworm and pine sawfly larvae outbreaks are occurring in some parts of the state, and host plants are being damaged by feeding. Hornworm larvae are beginning to appear in tobacco plant beds and will soon be showing up in tobacco fields. Mexican bean beetles and Colorado potato beetles are becoming numerous on truck crops in eastern Virginia. Controls are in order.

Onions are being injured by thrips to some extent in eastern Virginia, and some growers have had to apply chemicals for control. Spider mites are damaging spring settings of strawberries in the truck crop area.

Clover Aphid Makes News in New Mexico

STATE COLLEGE, N.M. — Grasshoppers continue as a prime insect in New Mexico. Spraying operations started in the Lea-Chaves area on June 6. The 'hoppers on the College Ranch have now migrated down from the plain area into the protected arroyos leading toward the Rio Grande. The main body is within one mile of the river. Some adults have been picked up in an onion field eight miles from the main body of grasshoppers.

Thrips still are in large populations on alfalfa, onions, and cotton.

Yellow clover aphid continues to be of extreme importance. The second cutting of hay in the southern half of the state is being heavily attacked with every field in the Mesilla Valley, at least, showing populations of aphids. Experimental plants on the college farms sprayed or dusted on Monday showed winged aphids the following day and by Thursday of the same week needed spraying again. Fields not sprayed show spots of no growth and much honeydew. The Fort Sumner area reports large populations at the first cutting date.

Aphids are attacking the tips of flower stalks on yucca to the extent that the flowers are distorted and completely gummed over with honeydew. Yucca moths, both Tegeticula and Prodoxus are present in numbers around the yucca blooms. — R. C. Dobson.

Boll Weevil May Be Problem in Tennessee

KNOXVILLE, TENN. — Cotton growth seems to be comparatively slow this week. So far only one adult boll weevil has been found in the fields. As soon as cotton starts putting on squares, a better idea of just how many weevils are present can be obtained. The number of hibernating weevils averaged 60 per acre for the spring's emergence. Even at this rate per acre, with favorable weather conditions there could be a build up and with the seasonal migration from the South they could cause considerable damage. Since the cool nights have retarded the growth of the cotton this might well be a determining factor in the extent of damage for the season.

Thrips seem to be decreasing from last week, when there was some damage. Recent rains may have helped in checking this pest, but aphids are still present in most fields at this time. Only a few scattered fields warrant control measures, however. The weather has been almost ideal for aphids.

The survey for this week indicates that flea beetles are increasing slightly from that of last week. Control has not been necessary up to this time. Flea hoppers in both adult and nymph stages are appearing in large numbers this week. If populations continue to increase at the rate they have in the last two weeks, there could be some damage as cotton gets larger and puts on squares.

Grasshoppers appear to be heavier than usual around the edges of the fields. No damage has been found so far this season, but there is possibility of some damage later on.

Armyworm damage is very light all over the cotton growing area. A few yellow-striped armyworms have been found in scattered fields. — R. P. Mullett.

Corn Borer Develops Rapidly in Illinois

URBANA, ILL.—Armyworm infestations are still rather spotted in the triangular area extending roughly from St. Louis to Charleston, north to Champaign and westward to Peoria. Exceptionally rank grains and grasses are infested. Many fields have been treated during the past week and excellent control has been reported. Dieldrin, ¼ lb. an acre, or toxaphene, 1½ lb. an acre, will readily control this pest.

Corn borer development is still two weeks earlier than normal. Moth emergence in the south third of Illinois is now almost complete. In the central third, pupation is complete, 25 to 50% of the moths have emerged, and eggs are now being deposited. In the northern third, pupation is almost complete, and moth emergence ranges from 10 to 25%.

Moth flight should reach a peak during this week or by early next week. Although moths now are placing eggs on corn, survival of the borers that hatch will be very low for at least another week or 10 days. Very few fields of corn will warrant treatment, and these are the early planted ones that are quite advanced compared with most fields in the area.

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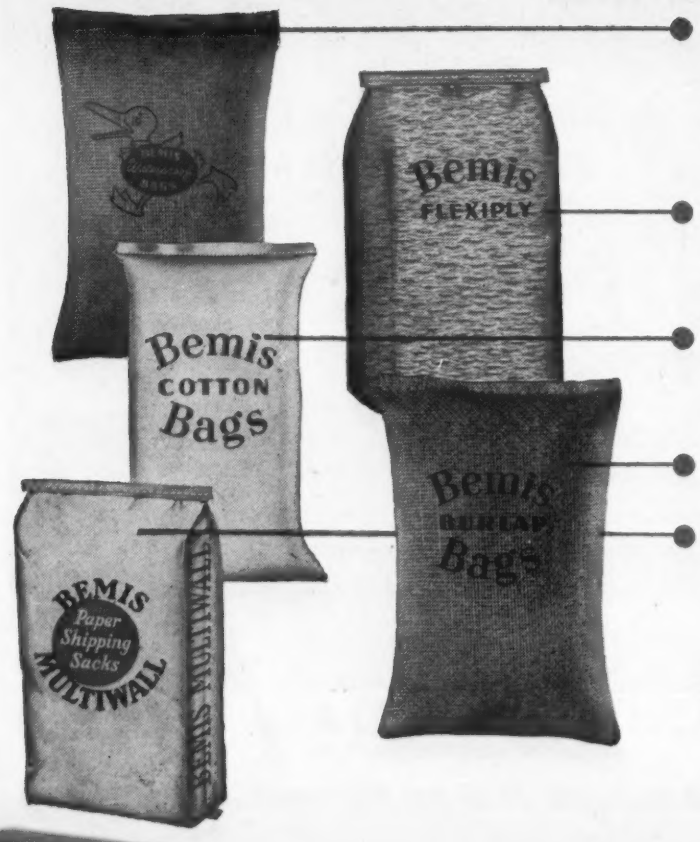

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oughly, time to treat is 12 to 14 ays after first eggs are found hatchg in the field. This will be about ne 20. In the East St. Louis vegtable area, eggs are hatching in elds of early market sweet corn. pply control measures, 1½ pounds DDT per acre, to these fields.

Hatching of overwintering grassopper eggs is almost complete in uch of the state. Many hoppers, ill concentrated in fence rows and eld margins, can readily be conrolled. Applications of aldrin, dielrin, heptachlor, or toxaphene will ontrol them effectively, and only a omparatively small area will require praying. Very soon these grasshopers will migrate, and control measres then will be necessary over enire fields.

Although the rains and humid weather of a week ago were of some benefit in reducing chinch bug populations, they are still abundant in many fields. In eastern and central Illinois, adults are still present in many thin stands of oats. They are laying eggs, and tiny red nymphs can be found at the base of plants and behind leaf sheaths. In southwestern Illinois, some fields of thin wheat have been damaged by the adults and the nymphs.

At present, bean leaf beetles are eeding extensively on newly emerging soybeans, but unless complete defoliation is imminent, treatment is ot necessary. In extreme cases DDT t 1 to 1½ lb. an acre, dieldrin at ¼ lb., or toxaphene at 1½ lb. will control this pest.

Cutworm damage to corn has already occurred, and serious elm leaf eetle damage is occurring on Chinese lms in southern Illinois. Two pounds of 50% wettable DDT powder or 6 lb. lead arsenate per 100 gal. water applied liberally to infested trees will control this pest. Bagworm eggs have hatched in central Illinois, and the small worms are feeding on foliage of trees.—H. B. Petty.

Maryland Reports Insect Damage

COLLEGE PARK, MD.—There has been some damage to second cutting alfalfa in Somerset County by the alfalfa weevil. In general, however, the second growth is free from weevil. Weevil damage should be about over for this year. Pea aphids have done damage to second growth alfalfa in Harford and Worcester Counties. Potato leafhopper adults were found in small numbers on alfalfa in Somerset County.

Light infestation of armyworm on grains, hay fields and pastures in Talbot and adjoining counties; corn has been damaged in St. Mary's County. Worms appear to have reached their peak, however.

Cutworms are injuring corn in Somerset County, and flea beetles are attacking young corn in different sections. These insects are responsible for the spread of Stewart's disease or bacterial wilt, particularly bad on some varieties of sweet corn. Experiments on control of this insect are underway.

Snap beans on the lower Shore have been hit quite hard by bean leaf beetles and spotted cucumber beetles. To control use malathion at 1½ pints per acre. Colorado potato beetles are quite troublesome on untreated potatoes and tomatoes. Use DDT, 2 quarts of 25 to 30 percent emulsion or 2 pounds wettable in 75 to 125 gallons of water, per acre. This will also control leafhoppers on potatoes. Tortoise beetles or "gold bugs" and flea beetles are numerous and doing damage to sweet potato foliage in the Salisbury area.

Codling moth entries in apples were observed May 23. Moth emergence is light due to cool weather. Leaf miner populations have increased in some orchards; and red-banded leaf roller pupae were first observed on May 25. A few two-spotted mites have been observed to date; and peach insects are under control in commercially sprayed orchards. — Theo. L. Bissell and Wallace C. Harding.

Early Bagworm Hatch Threatens Evergreens

STILLWATER, OKLA.—An early bagworm hatch is threatening evergreens and other plants throughout Oklahoma, with heavy infestations already reported in Southern sections of the state.

Bagworms can do extensive damage in a short time, according to J. C. Garrett, Oklahoma landscape specialist. Often plants are injured seriously before they are detected, because they are hard to see. Bagworms overwinter as eggs in a cocoon attached to limbs and twigs. After hatching, the worm lives in a tough portable silken case or "bag" of its own manufacture. A mixture of 3 to 4 tablespoons of lead arsenate per gallon of water is recommended for control.

Minnesota Reports Variety of Insects

ST. PAUL, MINN. — Grasshoppers that hatched during the past two weeks in southeastern, central, and northwestern Minnesota are growing rapidly and are beginning to cause some crop damage. In northwestern Minnesota, Melanoplus bivittatus and M. mexicanus hatch is practically complete and grasshopper development is far enough along so that the recent relatively warm rains likely have not affected them adversely. Warm weather has promoted high survival in general. The numbers of grasshoppers present in farmers' fields follow closely the prediction previously mapped by State Entomologists Office.

Farmers should continue checking fence rows, alfalfa, hay fields, roadsides, ditch banks and field margins. If 6-8 grasshoppers per square yard are found apply insecticides as soon as possible. All of the following insecticides give good control: Aldrin, 2 to 3 oz.; heptachlor, 3 to 4 oz.; dieldrin, 1 to 2 oz.; toxaphene, 1 to 1½ lb.; and chlordane, ½ to 1 lb. All these rates are in terms of the amounts of the actual insecticide per acre. The lower dosage rate in each case should be used on young grasshoppers before they get wings, and the higher rate on the adults with wings.

Armyworm adults continue to appear in light traps. Damage by a related cutworm in Wilkin County, required treatment of a sugar beet field with insecticides. Remember that many moths resemble armyworms superficially, and proper identification is very important.

Armyworm adults have a wing span of approximately 1½ inches, are plain brownish-gray in color and have a single, small pure white speck or spot near the center of the front wings.

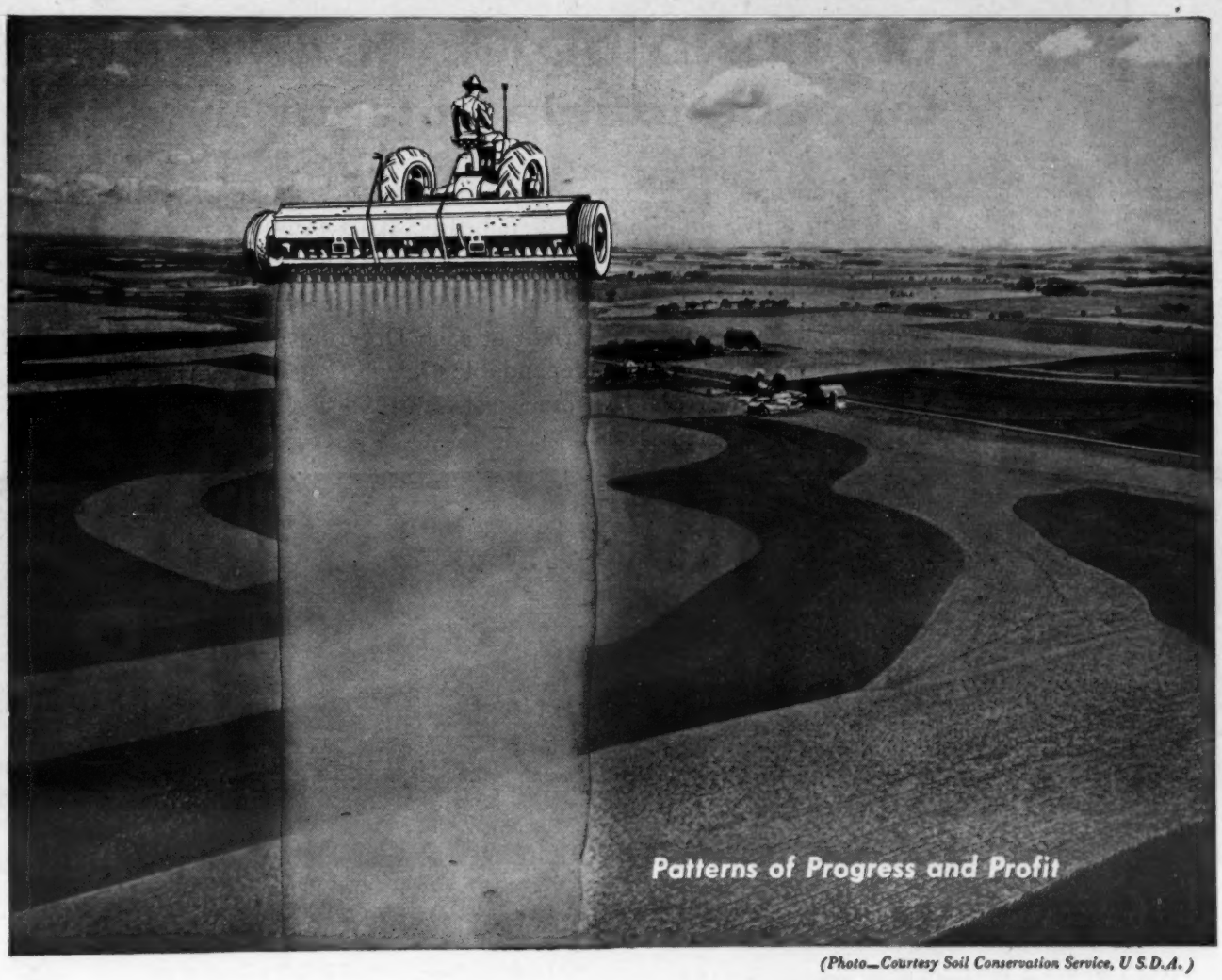
Spruce budworm, 5th instar larvae, were noted at Bemidji during the week and forest tent caterpillar larvae were nearly mature in Pine and Carlton Counties as of June 1.

Heavy local infestations of scale insects on elm, ash, oak and other deciduous trees and shrubs have been reported widely. Most abundant is European fruit lecanium.

Codling Moth Prominent In Report from Indiana

VINCENNES, IND. — Although codling moth egg laying and hatch were slowed down by the cooler weather, accompanied by heavy showers, new entries can still be found and hatch is expected to increase with the return of warmer weather. Complete covers are still needed. Entries present for this date are more plentiful than in an average year. Emergence cages show approximately 75% of the overwintering larvae have emerged, with daily

(Continued on page 21)



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Opposition Develops for Aerial Spraying Lien Law in California

SACRAMENTO — Opposition has developed in the California Legislature to Assembly Bill 96 by Gordon Fleury of Sacramento, proposing establishment of a system of liens for services performed by agricultural aircraft operators.

The California Hay, Grain and Feed Dealers Assn. has joined with the Agricultural Council of California, the California Farm Bureau Federation, Canners League of California and Western Growers Assn. in opposing its passage.

The bill states in part that any person who, at the request of a grower of agricultural products, furnishes agricultural aircraft services to such grower for such agricultural products has a lien upon the products before and after severance and in whatever form processed, for the price of services agreed to by the parties.

Opponents contend that AB96 would disrupt normal agricultural operations in California by creating a cloud on the title of farm products and thus interfere with normal borrowing practices.

Nitrogen Solution Group Schedules Field Day

SHENANDOAH, IOWA—The National Nitrogen Solution Assn. will hold a field day at the State Armory in Springfield, Ill., Nov. 17-18. Additional details, including information about exhibits, may be obtained from Roy F. Broyhill, Dakota City, Neb., meeting chairman.

PROFITABLE FARMING

SPRINGFIELD, ILL.—S. W. Melsted, University of Illinois agronomist, reports that "it is impossible in Illinois at least, to carry on a profitable farming enterprise without the use of commercial fertilizer." Mr. Melsted spoke recently before a meeting of bankers in Springfield, Ill.

Tour, Talks Feature South Carolina Fertilizer Conference

CLEMSON, S.C. — About 275 fertilizer manufacturers, dealers and salesmen attended the South Carolina fertilizer meeting at the Sandhill Experiment Station near Columbia recently.

Features of the day's program included a tour of the station to see a large number of research projects on farm crops and to hear explanations as to why and how the experiments are being conducted; a visit to the newly constructed Clemson College Livestock Laboratory located at the station, and talks by several agricultural leaders of the state.

The tour of the station was made in trucks provided by a number of fertilizer manufacturers and dealers. Among the research projects visited were those having to do with insecticide residues, lawn grasses, sesame production, peach production, effects of rate and time of apply potash, sources of nitrogen and ph phorous, rates of fertilizer for ma mum yields of cotton, use of mi elements, fertilizer treatments of falfa, irrigation and Coastal Bermu

The group was shown through Livestock Laboratory by Dr. R. Carter, director, Clemson Livest Sanitary Work. He briefly told of program for the control of contagi and infectious diseases of livest and poultry and explained some the methods and showed some of equipment used in diagnosing th diseases.

Dr. O. B. Garrison, directo South Carolina Agricultural Expe iment Station, of which the San hill Station is a branch, was th principal speaker on the afternoo program. He called attention to th value of research in helping farm ers to solve their problems and t make progress in their farming pro grams. He outlined briefly the var ous types of research being con ducted at the Sandhill Station an at the other stations in the state

S. A. Williams, Clemson Extensi Service, spoke briefly on the subje of fertilization of fish ponds a supervised a demonstration in t application of fertilizer to a pond ne where the noon lunch was serv and where the afternoon progra was held.

Others who spoke briefly includ Thos. W. Morgan, assistant direct Clemson Extension Service; Ed Sa lenger, Jr., Florence, president, Sou Carolina Plant Food Educational S ciety; R. H. Lemmon, Winnsboro, r tired county agent of Fairfield Cou ty; W. H. Rhodes, acting superi tendent, Sandhill Station; Haro Major, attorney, Anderson; R. Bailey, county agent, Richland Cou ty; Roy J. Ferree, leader, Clems Horticulture Extension Work; a Dr. W. H. Garman, American Pla Food Council, Washington, D.C.

B. D. Cloaninger, head, Clems Fertilizer Inspection and Analys Department, was in charge of t day's activities.

Merchants Chemical Co. Expands Midwest Offices

NEW YORK—Merchants Chemic Co., Inc., has expanded two Mi west sales offices, according to J. Watkins, Jr., vice president.

The Minneapolis offices and war house, under C. P. Barth, distri manager, have moved to larger qua ters in a newly constructed one-sto building at 111 22nd Ave. N.E. Fro these new facilities, seven salesme cover Minnesota, North Dakota a the northern part of Wisconsin.

The Cincinnati office, under R. Spatta, district manager, is addi 5,000 ft. to its facilities at 2933 Spri Grove Ave. The offices and warehou handle all products distributed Merchants, including acids, alkali fungicides, surfactants, chlorinat solvents, laundry compounds a chemical specialties.

Merchants Chemical Co. maintai additional sales offices and war houses in Chicago, Denver, Lou ville, Milwaukee, New York, Oma and South Norwalk, Conn.

LIMING SCHOOLS

BURLINGTON, VT. — Winst Way, Vermont extension agronomi is conducting liming schools for st Agricultural Stabilization and Co servation representatives in each the 14 counties in Vermont. Meetin still to be held are as follows: Ju 14, Grand Isle; June 15, Lamoil June 16, Franklin; June 17, Was ington; June 20, Chittenden, and Ju 28, Addison.

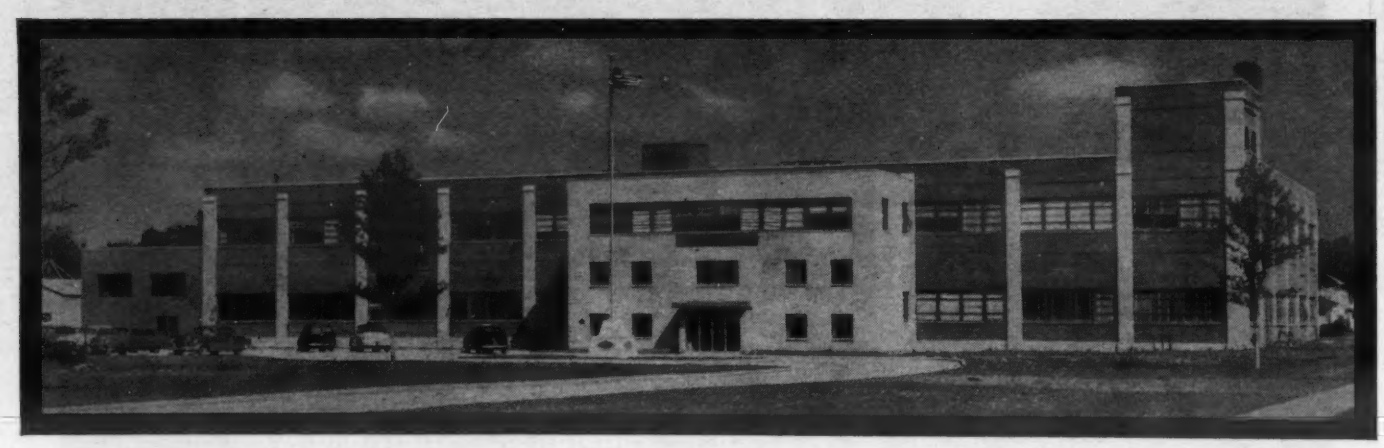
DIAMOND ALKALI CHEMICALS

Diamond Chemicals

Insecticide formulators choose DIAMOND DDT·LINDANE·BHC for dependable potency

Formulators have come to depend on DIAMOND agricultural chemicals and one reason is the building pictured below. It's DIAMOND's research and development center, where the search for new and better insecticides is continually being pushed forward.

At other laboratories, located right at each DIAMOND plant, we check on every production step. This dependable *Quality Control System* is another reason for the uniform high quality of DIAMOND agricultural chemicals.



Write for helpful literature on any of our products, and feel free to use our technical consulting service for your special problems. Your inquiries are welcome. DIAMOND ALKALI COMPANY, 300 Union Commerce Building, Cleveland 14, Ohio.

DIAMOND INSECTICIDES

- DDT—Technical
- BHC—High Gamma and 14% Technical
- LINDANE—100% Gamma Isomer
- K-101 (Ovex) Acaricide
- Hexachlorobenzene Seed Disinfectant

Wettable powders; dust concentrates; and emulsifiable and oil solutions of our technical grade chemicals.

Kenneth K. Krausche New Research Engineer For Floridin Co.

TALLAHASSEE, FLA. — Kenneth K. Krausche has been appointed research engineer assigned to sales for Floridin Co., at the headquarters offices and laboratories at Tallahassee, Fla.

Mr. Krausche is widely experienced in the agricultural chemical field, having graduated and received a master of science degree in agricultural chemistry from the University of Rhode Island. During World War II he supervised production of military explosives, and was most recently engaged in technical supervising and sales capacities for Pennsylvania Salt Manufacturing Co.

Insect, Plant Disease Clinics Set in Virginia

BLACKSBURG, VA.—S. B. Fenne, plant pathologist, and John M. Amos, entomologist-plant pathologist, both on the Virginia Polytechnic Institute staff, will conduct a series of insect and plant disease clinics in Virginia this month.

Farmers and home owners are invited to bring specimens of plant diseases, insects and weeds for identification. Laboratory equipment will be available to make a thorough examination of all specimens brought to the clinics, and control recommendations will be given.

The clinics are scheduled for: June 13, Henrico County Courthouse; June 14, Virginia State College, Petersburg; June 15, Norge Community Hall, James City County; June 16, City Hall, Warwick; June 17, Amelia County Courthouse; and June 22, Roanoke County Courthouse, Salem (tentative).

William V. Brown Named Davison Research Engineer

BALTIMORE — William V. Brown has joined the staff of the Research & Development Division of Davison Chemical Co., division of W. R. Grace & Co., and has been assigned to the Research Engineering Department at the company's Curtis Bay (Baltimore) plant.

After two years in the navy, Mr. Brown attended Virginia Polytechnic Institute where he graduated with a MS degree in chemical engineering in 1950. Before coming to Davison, he was with Rohm & Haas Co., working at Redstone Arsenal in Huntsville, Ala.

American Seed Trade Assn. Convention Set

MINNEAPOLIS—More than 1,000 delegates are expected to attend the 72nd annual convention of the American Seed Trade Assn., to be held here June 15-17.

Speakers will include Ezra Taft Benson, secretary of agriculture; Dr. O. B. Jesness, University of Minnesota; I. J. Johnson, Iowa State College, president of the American Society of Agronomy, and Dr. John Charles Walker, University of Wisconsin.

Oklahoma Plant Food Group Plans Meeting

TULSA — The annual meeting of the Oklahoma Plant Food Assn. has been set for June 16, 10 a.m. at the Hotel Tulsa. There will be an election of officers and board of directors in addition to other business. Arrangements have been made for luncheon in the meeting room.

FARM SHOW

ATLANTIC CITY—The third Mid-Atlantic Farm and Home Show will be held Nov. 2-5 at Convention Hall here, featuring the theme "Farming for the Future."

PESTICIDE OUTPUT

(Continued from page 1)

low those in January a year ago. However, despite this shrinkage in pound volume, the dollar value of these shipments exceeded that of last year by nearly a million dollars.

In the Department's classification of "agricultural insecticides and related materials not elsewhere classified," a 69% increase was noted. These materials, also, include many high unit value items:

Inorganic chemicals used for both fertilizers and pesticides were also reported to have increased in output for January-February, 1955, as compared to the same period of last year. Production of anhydrous ammonia, for instance, is listed at 519,761 tons for the first two months of 1955, as compared to 416,330 in 1954. Fertilizer grade ammonium nitrate also saw a significant increase in production. January-February output was listed at 318,197 tons for 1955, while 1954 output was 254,991 tons.

Synthetic ammonium sulfate production for January-February, 1955, was 201,240 tons, and 121,992 tons for 1954. The figures for coke oven ammonium sulfate were 151,254 tons and 142,034 tons, respectively.

Nitric acid production was up considerably, too. Output for the first two months of 1955 was 403,840 tons as compared to 313,590 for last year.

Phosphoric acid derived from phosphate rock totaled 331,608 tons for January-February, 1955, compared to 260,952 for the same two months of 1954.

Likewise, potash production was up. On the basis of 100% K_2O, 399,484 tons were produced in the first two months of 1955, against 352,750 tons in the same period of 1954.

Elemental sulfur produced by the Frasch method for the first two months this year was down. This year's production for that period was 846,782 tons compared to 905,803 last year. Sulfur obtained through recovery increased, however, the respective figures being 61,310 tons for 1955 and 55,000 for 1954.

Superphosphate (100% P_2O_5) was also on the increase in January-February this year, 419,202 tons for 1955, as against 371,107 in the first two months of 1954. Figures for production of urea were not available.

Missouri Fertility Group Elects Henry K. Lange President

COLUMBIA, MO.—The Soil Fertility and Plant Nutrition Council of Missouri held its annual meeting at the University of Missouri, June 2. Dr. George Smith, O. T. Coleman and John Falloon of the soils department of the College of Agriculture conducted a tour of the university's south farm for the group and discussed results secured from the research and demonstration program being conducted by the college.

Following a luncheon, the annual business meeting of the council was held, with Francis Best, council president, as chairman.

The group elected the following officers: Henry K. Lange, Lange Brothers, St. Louis, Mo., president; Perry Onstot, Davison Chemical Co., Joplin, Mo., vice president, and George La Rock, Olin Mathieson Chemical Corp., Columbia, Mo., secretary-treasurer.

Nine members of the board of directors were also elected. They are: William Mainard, Farm Bureau, Montgomery City, Mo.; L. L. Jacquier, Phillips Petroleum Co., Kansas City, Mo.; George La Rock, Olin Mathieson Chemical Corp., Columbia, Mo.; R. G. Graham, Virginia-Carolina Co., Knob Lick, Mo.; Harry B. Turpin, King City, Mo.; G. W. Hous Thompson Phosphate, Kansas City, Mo.; Henry K. Lange, Lange Brothers, St. Louis, Mo.; Francis Best Spencer Chemical Company, Kansas City, Mo., and Perry Onstot, Davison Chemical Company, Joplin, Mo.

Three Firms Given Safety Awards for Five-Year Records

WHITE SULPHUR SPRINGS, VA —Three chemical companies were presented with the Lammot du Pont Safety Plaque awards June 9 at the annual meeting of the Manufacturing Chemists' Assn. at the Greenbrier Hotel. The awards are made annually to the chemical companies showing the greatest improvement in plant safety over a five-year period.

The winner among those companies whose employees worked more than 2,000,000 man-hours annually was the American Potash and Chemical Corporation, Los Angeles, Cal.

Among firms whose workers put in less than 2,000,000 man-hours annually, duplicate awards were presented to Detroit Chemical Works, Detroit, Mich., and Tennessee Copper Company, New York, N.Y. The tie, first in the history of the annual awards, came about when both firms showed an identical percentage decrease in accident frequency rate for the contest period.

Stauffer Chemical Company, New York, was runner-up in the over million man-hour category and Eastern Gas and Fuel Associates, Boston Mass., was runner-up in the under million man-hour classification.

The chemical industry set a new all-time safety record in 1954 with lost-time accidents in the industry reduced to 3.27 per million man-hours worked, an 11% improvement over 1953. Accident severity rate also declined to 0.49 per thousand man-hours worked, a reduction of 40% over 1953.

The MCA safety performance report covers plants in North America representing over 757 million employee hours of exposure.

The group elected J. R. Hoover president of B. F. Goodrich Chemical Co., Cleveland, as chairman of the board, to succeed Fred J. Emmerich president of Allied Chemical & Dye Corp. William C. Foster, full-time president and a director of MCA was reelected.

Howard S. Bunn, vice president Union Carbide & Carbon Corp., was reelected as a vice president of MCA. Also elected a vice president was J. Albert Woods, president, Commercial Solvents Corp.

M. F. Crass, Jr., full-time secretary-treasurer, was reelected.

Directors elected for a term expiring May 31, 1958, are: Elton W. Clark, vice president, Allied Chemical & Dye Corp.; Ernest Hart, executive vice president in charge of chemical divisions, Food Machinery & Chemical Corp.; John A. Hill, president, Air Reduction Co., Inc.; John E. McKeen, president, Chas. Pfizer & Co., Inc.; George L. Parkhurst chairman of the board, Oronite Chemical Co.; Robert B. Semple president, Wyandotte Chemical Corp.; Kenneth C. Towe, president American Cyanamid Co.; O. V. Tracy president, Enjay Co., Inc., and Robert I. Wishnick, president, Witco Chemical Co.

Thomas S. Nichols, president, Olin Mathieson Chemical Corp., was re-elected a director for the term expiring May 31, 1956.

ALL IN ONE—

Just That Simple!

Tennessee Corporation custom formulated mineral mixtures are tailored to fit *your* particular needs. We custom mix any combination of minerals to your own specifications. There is only one ingredient to add to your regular fertilizer formula to produce a **COMPLETELY BALANCED PLANT FOOD.** It requires no additional labor or mixing facilities. **TC** mineral mixtures come to your plant in bulk or bag already mixed in controlled amounts of soluble and readily available forms of Copper, Manganese, Zinc, Iron, Boron, and Magnesium. Cut down on multiple purchasing, raw material cost, and handling by mineralizing with a **TC** custom formulated mineral mixture.

Samples, specifications and detailed information upon request.

TC TENNESSEE CORPORATION

DESIGN For Plant Nutrition

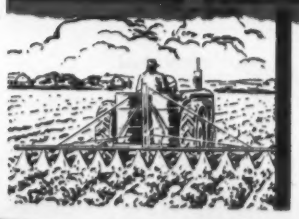
NU-MANESE
(Manganous Oxide)
For soil application, for use in mixed fertilizer or for direct spray or dust application.

Tennessee Corporation, the leading supplier of trace minerals to the nation's growers, announces two additional products for improved plant nutrition.

NU-IRON
For correction of Chlorosis resulting from iron deficiencies by spray or dust application to the plant.

The above supplements our widely accepted agricultural chemicals.

NU-M | NU-Z | TRI-BASIC COPPER SULFATE | COP-O-ZINK | ES-MIN-EL Spray or Dust | ES-MIN-EL For Soil Application



DUST MIXERS: Tennessee's NU-M, NU-Z, NU-IRON and TRI-BASIC Copper Sulfate are especially suited to be used in preparing nutritional sprays and dust mixtures.

TENNESSEE TC CORPORATION
617-639 Grant Building, Atlanta, Georgia

Special Retail Section

Better Selling

Richer Fields for Dealers

A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW

PENNSYLVANIA DEALER—Ethelbert P. Bernard, owner of the Sunshine Feed Store, Pottstown, Pa., is shown above showing a pesticide to a customer. A knowledge of the individual needs of his customers has helped Mr. Bernard build a prosperous fertilizer and pesticide business.

Pennsylvania Dealer Finds That It's Good Business to Know the Customer's Business

Ethelbert P. Bernard, owner of the Sunshine Feed Store, Pottstown, Pa., makes it his business to know the needs of his customers. As a result, his customers tell him their problems and trust his judgment to deliver the right products. This is a solid foundation on which he has built a lively fertilizer and pesticide business.

"As far as we are concerned, every customer has a different problem that must be reckoned with individually," says Mr. Bernard. "Even if two farmers are raising the same crops, it doesn't mean that they can or should use the same fertilizer. Soil content may be different because of locality, previous crops raising and other conditions. For this reason, we check through each customer's requirements thoroughly before making a recommendation.

"As a result, our customers have placed confidence in us. Year in and year out, we enjoy repeat trade."

Mr. Bernard is continually studying soil conditions in the area, making soil tests, reading up all reports on local crop situations and, in particular, noting the different crops that are being raised each season. Armed with this information, he is able to discuss every customer's raising problems on a personalized basis.

The Sunshine Store stocks several leading brands of dry fertilizer that are most suited for local soil conditions. Mr. Bernard is familiar with the ingredients, knows the quantities required for specific acreage and has acquainted himself with the best means of spreading the particular fertilizer.

"A lot of this information comes with the fertilizer itself," says Mr. Bernard. "Instructions are printed on the bag or instructions and data are available separately from leaflets and pamphlets that we secure. All we have to do is read this material and reconcile it with local soil requirements and we have a store of information to give the average customer. Curiously enough, the average customer seldom refers to this material that makes them more dependent upon the dealer. And that is exactly where we come in."

Mr. Bernard maintains a record of every customer buying fertilizer. He notes the date and quantity as well as the acreage it is to spread over and the type of crops being raised. From past experience, he knows the fertilizer requirements necessary, and he checks this card file regularly.

As soon as he notes that a certain customer should be using more fertilizer for the acreage and crops being raised, he puts in a telephone call to that customer. It usually results in an extra delivery.

"We have to keep track of the useage that customers make of the fertilizer that they buy from us," says Mr. Bernard, "so that they get the best results. That is why customers rely on us so much. In fact, there are many customers to whom we make seasonal fertilizer deliveries without them even telling us to do so. We know from past contacts what they need and how much. And they get deliveries accordingly."

During his spare time, Mr. Bernard will scan through his other customer files to uncover certain ones that may need fertilizer but do not buy from his outlet. As a rule, he tries to keep a running card file on all his customers, regardless of what they buy.

"During our contacts with customers and their store visits, we learn a lot about their raising conditions, acreage and crop results," he says. "And we make a note of this after the customer leaves. Periodically, we may refer to these cards when we want to promote a certain item and because we have this information we know how to handle the particular situation."

Records that show customers buying garden equipment, farm implements or seeds for planting point to

(Continued on page 16)

SHOP TALK

OVER THE COUNTER

FOR THE DEALER

By EMMET J. HOFFMAN
Croplife Merchandising Editor

Farmers are likely to listen when their neighbors or county agent tell them how properly fertilized fields are outdoing others not fertilized. Statements by successful fertilizer users and county agents, while not any more authentic than the dealer's, carry that added note of conviction which dubious farmers are more willing to accept in most cases.

Recently, a farm reporter from a midwestern newspaper interviewed numerous farmers concerning the effect of fertilizer on soybeans. Soybeans, of course, are less responsive to fertilizer use than most other crops. Agricultural experiment stations usually have no fertilizer recommendations other than fitting soybeans in a sound crop rotation program.

Nevertheless, the answers of some of the farmers—which make good selling points for dealers—sound convincing. Here are some of the answers:

"I applied 100 lb. of 6-24-12 to my beans during the second cultivation last year. The land had been in flax the year before.

"It was just an experiment with two acres but you could tell the difference. The fertilized beans grew taller and bushier and had a greener color.

"If I had beans going into ground that hadn't been fertilized the year before, I'd surely put on fertilizer."

Another farmer said he conducted a similar experiment through what he calls "no fault of my own."

He had 100 pounds of ammonium nitrate applied to his corn land last year, then decided to stay within his acreage allotment and planted beans on the diverted acres.

"Those beans ran 41 bu. to the acre," he said. "But the moisture was up to 22 or 23%. They would have dried down to about a 35 bu. yield, which still is good. I don't know if the nitrogen was responsible or not but I'll take that yield any day."

Another farmer said he had some low ground that tended to be alkali and some years, soybeans didn't even ripen. Other years, he'd get some ripe and some green beans.

"Last year, I put on 0-20-20 and those beans really matured. Didn't have a green bean in the lot," he declared. "I believe fertilizer works well on this type of land."

Still another farmer said he never had much success raising soybeans on the three or four acres of peat land he has on his farm. Last year, he went in with "a heavy application of phosphate and potash" and "got just as good yields off the peat as I did on black soil."

By RAYMOND ROSSON
County Agent,
Washington County, Tenn.

"Dad was smart," said a young farmer last week.

"You see, it was like this: Some 20 years ago Dad got it into his head, that it would be a good thing for us and the farm, too, for him to go to the agricultural college for a short course. And do you know what he did first after staying at the college for five weeks?

"He limed the entire tillable acreage—only 85 in all. He said we didn't have many acres and we had to make 'em good. And after he got them limed, he began applying phosphate and sowing more legumes, and I wish you could have seen the difference in the clovers and especially the alfalfa.

"And another thing. He got the idea that pasture was a crop, just the same as corn, or small grain, so we began fertilizing our pasture fields. The pasture consisted of orchard grass, Ladino clover and a sprinkle of alfalfa. We first tried 300 lb. of 0-12-12 fertilizer, leaving a check plot. We then changed to 500 lb. per acre annually of 6-12-12 and it was the stuff, until we tried 700 lb. of 5-10-20.

"We can now keep a cow eight to 10 months (depending on weather) on one acre of pasture, by alternating and during the other two to four months feed her 'one to five' with all the alfalfa hay she will clean up. And that is a pretty good way to produce from 9,000 to 10,000 lb. of milk.

"Dad has sold our dealer and the dealer has sold many other farmers and I know that is an answer to any good county agent's prayer."

This dad-and-son combination could be repeated in many communities and in many states.

GREEN PASTURES

BOSTON — "Green Pastures," a bulletin describing how sound management practices have paid off in better forage programs for New England farmers, has been published as a cooperative venture by the New England extension services. Part of the cost was underwritten by the New England Green Pastures Committee. The bulletin has been distributed to 40,000 farm families.

It was a blazing hot June day, and about 3 in the afternoon. Pat came into the office, his face flushed with perspiration. His blue shirt was wet, too, with sweat spots around the shoulders and under his arms. He placed a hoe in the corner of the office, then sat wearily at his desk.

"Gosh, I'm tired," he said. "Hoeing in that demonstration garden is hard work. I'm not as young as I used to be. I've been to the chiropractor twice this spring getting kinks worked out of my back."

Oscar, the frugal partner, felt like laughing, but he didn't. "Well, it was your idea," he said.

"Sure, it was my idea," Pat said, "and it's selling a lot of fertilizer, pesticides and garden supplies for us. Folks are always coming out there to see how that garden is getting along—the fertilized half and the unfertilized half. Just wait until the sweet corn gets up high. Then we'll see a difference in what fertilizer does."

"And you've got it marked so nicely," complimented Tillie, the plumpish bookkeeper. "Farmers and gardeners can read every sign and see just what the fertilizer mixture was, and what sprays you used here and there."

"Sure, it's a good idea," Pat grumbled wearily. "And Oscar's getting the best of the deal. He wouldn't let us use the firm's funds to buy the lot, so I had to. All the firm pays is $75 a year rental. That doesn't cover interest on my investment and the taxes."

"Ach, you wanted it," Oscar gloated ever so slightly, "so I gave in."

"But I do all the work in the garden," Pat complained. "You don't help one bit."

"Me!" echoed Oscar. "I have a garden at home. Minnie hoes, and I sprinkle. I am a busy man."

"Well," declared Pat. "I'm working on that demonstration garden all the time, it seems, but yet it sells for us. The least the firm could do is pay my bills for chiropractic treatments. I paid $3 each for two."

"No," Oscar said firmly, holding onto the purse strings. "That's a personal expense."

Pat was very silent for a moment. "Well, I can see I'll get no help here. I'm going out for a cup of coffee over at Happy's. I'll be back soon."

"I made a good deal with Pat when I made him buy the lot," Oscar chuckled. "He's paying through the nose for that idea in more ways than one."

"The customers are very interested in it," Tillie said. "And Pat keeps it neat as a pin."

"And when he's out there working in the demonstration garden he isn't spending a lot of time thinking up promotion ideas that cost money," Oscar said delightedly. "We're saving money that way."

About a half hour later, Pat came back from the coffee shop. "I've made a decision, Oscar," he said.

"What's that?" asked his pudgy partner.

"I'm going to quit working in the garden," Pat said, "and devote more of my time to selling. I can hire somebody to hoe in the garden when we need it. Kink Bevans works at odd jobs for about $1.75 an hour."

"$1.75 an hour!" exclaimed Oscar. "Why, he isn't worth that. He drinks so much he doesn't know what he's doing half the time." A crafty look came into his eyes. "Oh, well, that's your business. You own the land. You can hire anybody you want."

"What do you mean?" Pat asked slowly. "You mean you think I'll pay wages for hoeing out of my pocket."

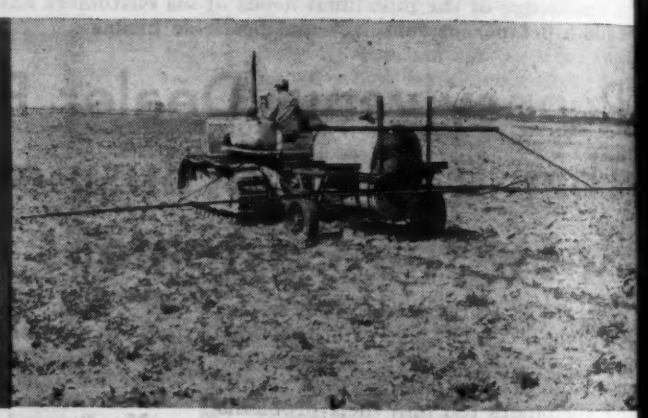
Oscar's face was cold. "We pay you $75 a year for rent of the garden. It's your idea to keep it so fancy—not mine. So you can pay for the extra hoeing, if you hire it done."

Pat put his right foot on his chair, and gazed across the desk at his partner. "So that's your game, is it? You won't pay for chiropractic treatments or hired men, but you will take the profit from the sales the garden makes? You won't work in the garden, and the men won't, because they have so much else to do. So we have to hire somebody. And this company's going to pay the bill. We can charge it to sales promotion. We haven't spent much this summer."

Oscar flinched. If Pat so much as mentioned sales promotion, a cold

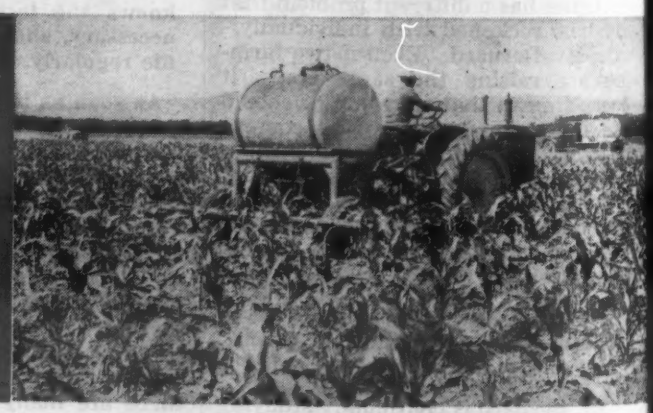
Moving ARCADIAN makes big-profit

The balanced fertilizer for modern crops, ARCADIAN 12-12-12 packs concentrated growing power in easy-lifting 80-pound bags. Every firm granule is complete plant food rich in nitrogen, phosphorus and potash. You handle less weight—farmers handle less—you both get more out of it.

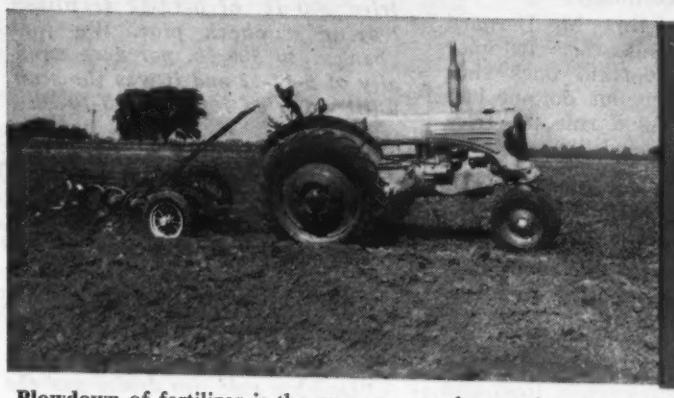


Spreading nitrogen on 100 acres per day is easy with new ARCADIAN low-pressure Nitrogen Solutions. A tractor tank with spray boom or dribble tubes does the job—with no bags for dealer or farmer to lift. Sell ARCADIAN Nitrogen Solutions *and* application equipment.

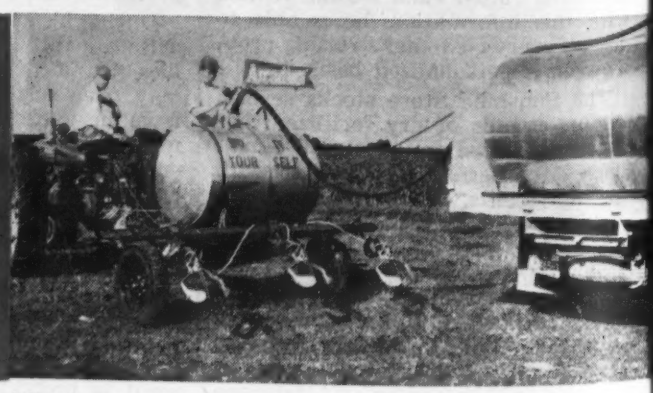
A labor-saver if there ever was one, ARCADIAN UREA 45 Nitrogen Fertilizer packs 45 pounds of nitrogen in every 100 pounds weight. It's the most concentrated dry nitrogen available, makes a good payload for you and the farmer.



Side-dressing 40 to 80 acres a day with nitrogen is easy with low-pressure ARCADIAN NITRANA® Solutions and is a fast-growing practice. Both NITRANA and application equipment are making big sales for handlers of the ARCADIAN line.



Plowdown of fertilizer is the way more and more farmers turn sod, stalks and straw into nitrogen-rich organic matter that builds bigger crops while it improves the soil. ARCADIAN products are ideal for this market that spreads fertilizer sales over the year.



Machinery does the heavy work for you as well as the farmer when you handle and sell ARCADIAN Nitrogen Solutions. They save labor and backaches, speed up handling, and build profitable new fertilizer and equipment business all in one.

ror struck Oscar's silver lined
rt. Sales promotion meant spend-
money — and Oscar didn't like
t.

"Of course," Pat inferred softly, f certain other people around here ould help regularly with the hoe- g, then I wouldn't hire any extra lp for it. I'll think it over for a y or so."

Pat didn't get down to the office til 11 a.m. the following morning, cause he had to make a few calls farmers first by appointment. As parked his car at the curb by the monstration garden, he noticed that o long rows, which yesterday had en full of weeds, were now clean a whistle and had been raked be- des.

This surprised him very much. He went into the office, greeted Oscar and Tillie, sat down at the desk and began to look over some telephone messages. Glancing up, he noticed that Oscar was having considerable difficulty writing. He held the pencil rather stiffly in his hand, as though favoring a blister or two.

Pat smiled ever so lightly and continued with his work. He knew he had touched Oscar's sore spot—adding additional expense. Rather than incure that unbearable thing, Oscar had swallowed his pride and somehow had gotten out in the garden and hoed a bit for the sake of saving money, if not for the partnership.

Money sure talks with Oscar, grinned Pat to himself. I've got to remember that when I want him to work a little harder.

European Chafer Spreads in New York

GENEVA, N.Y.—A new turf pest from Europe is spreading in New York. Known as the European chafer, it is causing serious damage to lawns, golf courses, parks, cemeteries and pastures where it has become established.

First found in this country near Newark, N.Y., in 1940, the European chafer has now been reported from a number of widely scattered areas in the state.

HEADS SEED DEALERS

LOUISVILLE—Howell Patton, Jr., Franklin, Ky., has been elected president of the Kentucky Seed Dealers Assn.

New England Gets Improved Tornado Warning System

BOSTON — Quicker warnings for New England farmers are being set up here to avoid repetition of huge losses suffered in the past through tornadoes and hurricanes.

The hurricane that hit New England last August caused the greatest amount of damage of any hurricane in U.S. history, upwards of $500,000,000. The tornado of 1953 in Worcester County set an all time property record loss of of $600,000,000.

New England, now, is probably the most weather conscious section of the entire U.S. The best storm and hurricane warning system in the six-state region's history is now being set up. The Weather Bureau has a new 9-point program with funds already on hand and Congress has been asked for an extra $8,100,000 for long-range planning.

A coastal radar network is being set up which will warn of storms from 50 to 300 miles away and storm buildups. Other improvement steps are:

1. Getting out alerts to the region. A pressroom is being set up in the main weather bureau office in Boston with facilities to assure rapid transmission to newspapers, radio and television.

2. Studies are underway to see if more New England cities can be added to the hurricane warning teletypewriter circuit (receiving only) that now extends from Brownsville along the Gulf Coast to Miami and thence to Boston.

3. An expanded public information program has been developed. Pamphlets entitled "Ten rules of what to do" in case of hurricanes are being printed and will be distributed next month.

4. The present research program at Boston on meteorological subjects is being concentrated on hurricanes.

(Although all New Englanders were stunned by three hurricanes last year. Oscar Tenenbaum of the Boston Weather Bureau, meteorologist-in-charge, says hurricanes have occurred in New England for the past 300 years. Earliest on record was in 1635, soon after the Pilgrims reached Plymouth Rock).

5. Arrangements are being made so that private industries, public utilities, federal and state agencies can hook into the local weather teletypewriter circuits and get weather information faster than in previous years.

6. A 17-mile range radar, installed in the Boston office last year, is available this year. On top of Blue Hills a 350-mile range radar was installed last November. Massachusetts Institute of Technology has special radar equipment and arrangements are being made for better liaison with M. I. T.

7. Closer cooperation has been worked out with the Woods Hole Massachusetts Oceanographic Institute for publishing results of their studies on tidal waves and storms approaching from the sea.

LOW VEGETABLE PRICES

WORCESTER, MASS.—Prices on Massachusetts vegetables were at low levels throughout 1954 despite lower supplies as the result of hurricane and other losses, according to Walter E. Piper, marketing specialist of the state agriculture department. A total of the 12 leading farm items showed a drop in volume from 2,376,000 units in 1953 to 1,974,000 and the average unit value decreased from $2.20 to $1.68 in 1954, he reported.

fertilizers to the farm business for you!

New, improved forms of dependable nitrogen such as large-crystal ARCADIAN *American* Nitrate of Soda continue to move in volume. Free-flowing ARCADIAN Nitrate of Soda and pelleted ARCADIAN A-N-L® Nitrogen Fertilizer are adapted to new styles of farming.

Proof of the profits in modern ARCADIAN Fertilizers is being shown in Agricultural College experimental plots like this one on wheat, as well as in field days and farmer-dealer demonstrations. When you sell ARCADIAN, this practical proof helps bring you new customers, new sales.

Expanded plant capacity for making the newest, most modern forms of fertilizer is part of the continuing program Nitrogen Division is aiming at the fast-growing market for more and better plant foods. Your customers are buying ARCADIAN —so sell ARCADIAN for extra profits.

Take advantage of this double-barreled SALES OPPORTUNITY!

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Make the most of the ferment in the fertilizer business! Sell new ARCADIAN Fertilizers—sell fast-improving new fertilizer equipment. Tie in with the biggest advertising campaign in fertilizer history, now featuring ARCADIAN products in farm magazines, newspapers and radio broadcasts that blanket your territory.

Fill in and mail this coupon NOW!

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- ☐ **American Nitrate of Soda** *Improved Granular*
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FARM SERVICE DATA

Extension Station Reports

Placing a narrow band of a chemical soil conditioner over the seed row at planting time reduced soil crusting and increased seedling emergence in tests carried on at the New York Experiment Station at Geneva. Carrots, beets and beans were used in the station tests on a soil that tends to form a surface crust after a compacting rain.

"Chemical soil conditioners cost too much for treating entire fields," say Nathan Peck and M. T. Vittum of the station's Vegetable Crops Department. "It is clear from our experiments that limiting the soil conditioners to a narrow band immediately over the row, where they are needed most, is an acceptable method for their use."

Four ounces of the active ingredient per gallon of water applied at the rate of one to two gallons per 1,000 feet of row prevented soil crusting prior to seedling emergence in the station tests.

"At $2 lb., material used at this rate would cost between 50¢ and $1 for 1,000 feet of row," declare the station workers. "This figures out at $10.90 to $21.80 per acre for crops seeded in 24-inch rows."

★

A one-spray treatment with parathion, if properly timed, will give almost complete control of the currant borer, according to Dr. E. F. Taschenberg, Cornell entomologist at the Fredonia Vineyard Laboratory. The spray treatment developed by the Station scientist replaces the laborious, time-consuming, and expensive practice of cutting out and burning infested shoots which has been standard procedure in the past.

★

Airplane spraying with new insecticides, particularly DDT, has provided the first practical means to control epidemic outbreaks of destructive insects in forests, report specialists of the Agricultural Extension Service, West Virginia University. Previously, such outbreaks destroyed as much as 90% of the merchantable timber over extensive forest areas.

Research in the specialized field of aerial spraying is being conducted cooperatively by the U. S. Forest Service and the Agricultural Research Service at the U.S. Department of Agriculture's Agricultural Research Center in Beltsville, Md. The work is directed toward developing equipment and sprays that will increase the effectiveness and reduce the cost of this method of insect control.

During the past 8 years, more than 5 million acres of forest land have been successfully treated by aerial spraying, and control costs have been reduced from $3 to approximately $1 per acre.

★

Adding nitrogen in the form of urea to the first three pesticide sprays following bloom has held the nitrogen nutrition of apple trees at a satisfactory level over a nine-year period in tests carried on by scientists at the New York Experiment Station at Geneva.

A report on the experiments has been released by the Station and is available upon request. It is Bulletin No. 766, entitled "Influence of Certain Nitrogen and Fungicide Applications on Yield and Quality of Apples" by Dr. D. H. Palmiter and Dr. J. M. Hamilton.

Various soil and foliage applications of different nitrogenous materials were compared in the tests to determine their effect on fruit yield and quality, orchard vigor and scab control. A wettable sulfur was used as the fungicide for scab control on these trees. A nitrogen-carrying fungicide was included as one of the foliage spray treatments.

"Trees receiving foliage applications of urea produced more scab-free fruit than those receiving soil treatments with the same sulfur program," say the station scientists. "This depends, however, on the vigor of the tree, the inoculum potential, and the protective level of the fungicide."

Fermate-sprayed trees maintained their yield without raising the nitrogen level and thus were more resistant to scab, it was explained. Fruit from trees sprayed with Fermate dropped less at harvest, had better color, and was firmer and larger than that from trees sprayed with sulfur and treated with nitrogen to maintain yields.

★

The Connecticut Agricultural Experiment Station has released a bulletin, written by John C. Schread, entomologist at the station, which contains data on various types of mites and results of experiments in controlling them.

Mr. Schread indicates the effectiveness of 13 pesticides in experiments to control five species of mites which attack ornamentals. Certain of the systemic materials appeared to be more toxic to mites than others; they also exhibited more extended residual activity. On the other hand, all of the specific miticides seemed to be equally effective in controlling the crawling stages of mites.

Your new source for nitrogen

SOHIO CHEMICAL COMPANY

BEGINS SHIPPING JAN. 1, 1956

Shipments of Sohio Chemical nitrogen products to fertilizer manufacturers will begin January 1, 1956. Actual production at the new Sohio Chemical Company plant will get under way in the fall of this year. But in order to serve you better during your peak season, the first 30-45 days of product output will go into storage. After this period the vast production facilities of the company coupled with tremendous storage capacity, means that Sohio can manufacture and ship large emergency orders at any time without interrupting normal shipments.

The field of nitrogen chemicals is a new venture for Sohio, a name that has been associated with petroleum products for 85 years. We'd like you to know all the facts about this new source for these basic fertilizer chemicals.

PLANNED WITH YOU IN MIND

The Sohio Chemical Company is a new company, formed to meet the fast-growing needs of the fertilizer manufacturer. This new company is backed by the reputation and resources of Sohio, a name that stands for petroleum products of unexcelled quality, throughout Ohio and the United States.

WHERE WE ARE LOCATED

Lima, Ohio, approximately 150 miles south and west of Cleveland, is the location of the new Sohio Chemical Company. The choice of Lima as the new plant site was based on the highly important fact that it is located to best serve the Midwest's richest farm land. Location at Lima puts Sohio Chemical products within quick and easy reach of fertilizer manufacturers.

utch Elm Disease Varning Issued or New England

BOSTON—New England is in for nother round of Dutch Elm disease is summer, but it will be worse, ntomologists say, because the elm ark beetles and Dutch fungus are mbining.

By themselves, both are minor sts, but together they're terrific. he disease could not spread from ee to tree without the beetle. And he beetle could not inflict too much amage if its victims weren't weakned by the disease. Dying trees re preferred breeding places of the eetles.

DDT is going to be used to protect the New England elms this season in larger amounts. Annual spray programs are being set up in all six states.

The beetles, entomologists point out, bore into the bark and make galleries where the females lay their eggs. Later, the larvae make channels in the inner bark. The fungus is carried in and out of the tree by the beetles and fungous spores flourish in the egg galleries and beetle passageways.

AGRONOMIST HONORED

URBANA, ILL.—E. D. Walker, who has been an extension agronomist and soil conservationist at the University of Illinois since 1936, was one of five College of Agriculture staff members honored recently. The five, all with long service at the university, will retire this fall.

180 Bu. Yield Tops South Carolina Contest

CLEMSON, S.C.—First place winner in the 1954 South Carolina Corn Contest is W. O. Noffz, Greenwood County. His yield was 180.3 bu. corn produced on one acre. Second place winner is H. Ben Kinard, also of Greenwood County, whose yield was 179.3 bu. Both winners grew Coker 911 hybrid corn. Mr. Noffz has been awarded a cash prize of $600 and Mr. Kinard a prize of $250.

The contest was sponsored by the South Carolina Plant Food Educational Society and was conducted by the Clemson Extension Service. E. D. Sallenger, Florence, president of the society, presided at the luncheon.

Vermont Extension Work In Agriculture During 1954 Reviewed

BURLINGTON, VT. — Increased milk marketing activities, adoption of improved farming methods, control of injurious insects and farm and home counseling were prominent phases of the Vermont Extension Service's 1954 agricultural program.

About 13,000 farm and rural families were directly assisted in their problems by Vermont county agricultural agents during the year, reports Robert Davison, associate director of the Vermont Extension Service and county agent leader.

Over 61,000 persons attended Extension Service educational meetings during the year.

The Green Pastures Program continued to help farmers, and in addition to encouraging the use of improved varieties and strains, more fertilizers and improved methods, the program stressed feeding and efficiency.

Vermont farmers and woodland owners were plagued by tent caterpillars and army worms.

More interest in marketing came during 1954 as Green Mountain dairymen took part in increasing milk consumption in the Boston milkshed.

Farm and home counseling helped many families to help themselves. Problems of management were discussed on a family basis and the people set up their own goals to improve farm operation.

The greatest amount of agent's time was devoted to crops, livestock, planning and management of the farm business, soil and water conservation and forestry management. More than 10,000 Vermont farmers were assisted directly or indirectly to adopt recommended practices in one phase of crops—hay forage.

Preparation for market, commodity outlook and market information was of great interest to Vermont's rural population. Income tax, farm records and community development played a major role in the Extension Service's 1954 program.

ogchemicals

PENTS

96

YOUR NITROGEN NEEDS AS YOU WANT THEM

The new Sohio Chemical Company will manufacture an extensive line of nitrogen products for agricultural and industrial use. Major product classifications are:

Ammonia
Nitrogen Solutions
Urea
Urea Solutions
Nitric Acid

In addition to this complete line of chemicals, Sohio offers to fertilizer manufacturers, highly qualified technical assistance and the services of outstanding agronomists.

QUICK DELIVERIES WITH *YOUR* CHOICE OF CARRIER

Location at Lima means that quick deliveries can be made by rail, tank truck or truckload. The plant will be served by five leading railroads and rail shipments will be made in Sohio's new aluminum or steel tank-cars, trip-leased if desired. Liquid materials will be available to manufacturers in labor-saving tank-truck shipments. Solids will be shipped in both truck-load and less-than-truckload amounts. For complete product listing and price quotations, write or wire Sohio Chemical Company, Lima, Ohio.

SOHIO

CHEMICAL COMPANY

Fertilizer Increases Forage Yield from Renovated Pastures

COLLEGE STATION, TEXAS — Pastures fertilized after renovation averaged 2,240 lb. forage to the acre more than renovated-unfertilized pastures in recent tests at the Blackland Experiment Station, Temple.

The tests also indicated that pasture fertilization gives good increases in yield but that renovation alone does not necessarily increase forage production.

Conducted from 1952-54, the studies were designed to determine the value of renovation and fertilization of long-established Bermudagrass pastures.

Untreated check plots averaged 3,510 lb. air dry forage during each of the three years, renovated pasture 3,390, fertilized pasture 5,500 and fertilized - renovated pasture, 5,630 pounds of hay per acre.

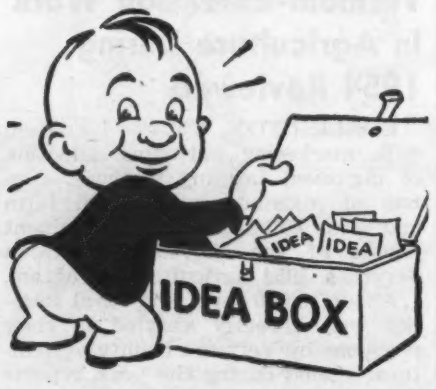
All fertilized areas received 60 lb. each of nitrogen, phosphoric acid and potash yearly.

BEETLE SURVEY

TRENTON, N.J.—Plans are under way for a survey of the status of the white-fringed beetle in New Jersey, according to Frank A. Soraci, state entomology chief. An infestation of the insect was discovered near Vineland, N.J., last summer, and 350 acres in that area have been sprayed.

Better Selling

Richer Sales Fields for Dealers



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6164—Crabgrass Film

A new slide film in sound and color titled, "Prevent Crabgrass and Other Weeds with Crag Herbicide-1" is now available. This 7-min. film will be lent without charge by Crag Agricultural Chemicals, Carbide & Carbon Chemicals Co., a division of Union Carbide & Carbon Corp. To secure the film on loan check No. 6164 on the coupon and mail it to this publication.

No. 6167—Insecticide Bulletin

Prentiss Drug & Chemical Co., Inc., has just published an information bulletin on Prentox Pyronyl "75", an oil-free pyronyl concentrate. The bulletin states that the product is a new development in the field of pyrethrum insecticides, "incorporating the rapid killing power and complete freedom from toxicity of pyrethrum and the stabilizing and insect repellant activity of piperonyl butoxide. It contains no kerosene, no odorless base oil, nor any other solvent." The most important area claimed for the use of Prentox Pyronyl "75" will be in the field of grain protection. It provides a method whereby a grain protectant entirely free of oil may be applied directly on the grain. To secure the bulletin check No. 6167 and mail it to this publication.

No. 6260—Moisture, Fertility Meter

A new descriptive catalog is offered by Industrial Instruments, Inc., on soil moisture measurement and irrigation control. The catalog describes in detail the various methods of soil moisture and fertility measurements based upon the electrolytic conductivity principle as developed by Dr. George Bouyoucos. The publication also lists the necessary equipment for the various tests and controls, including the Bouyoucos cells, moisture meter and irrigation controller, etc. The catalog may be obtained by circling No. 6260 on the coupon and mailing it to this newspaper.

No. 6168—NH_3 Hoses

Manufacturers and users of anhydrous ammonia as fertilizer have available three new types of hose manufactured by the Thermoid Co. Amoflex type No. 1 for bulk loading is made in 1¼, 1½ and 2 in. ID sizes and handles working pressures of 350 to 400 psi—available in 50-ft. lengths only. Amoflex type No. 2 for handling anhydrous ammonia in delivery and storage up to 350 psi is manufactured in ½ in. ¾ in. and 1 in. ID sizes—available in long lengths. Amoflex type No. 3 for applying ammonia from portable field tanks made in ¼ in. and ⅜ in. ID—is also available in long lengths and permits working pressures up to 150 psi. To secure more complete information check No. 6168 on the coupon and mail it to this newspaper.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted here to help keep retail dealers on rotational circulation informed of new industry products, literature and services.

No. 5164—Bag Opening Device

The Hudson Pulp & Paper Corp. has announced a new multiwall bag feature, called by the trade name, "Snap-Open Sack." "Bag users will be able to open multiwalls with a quick snap of the wrist," a company spokesman said. The quick-opening device, on which a patent has been applied for, is achieved by placing

a series of small perforations in one corner of the bag under the tape and near the sewing line. By grasping the tape at this corner and pulling sharply upward, an opening is instantly started. It can be stopped and held at any point convenient for controlled spout pouring. The bag is available in both open-mouth and valve types. Check No. 5164 on the coupon, clip and mail it to secure more complete details.

No. 6251—Row Planter Attachment

The E. S. Gandrud Co., Inc., nounces that its new row plan attachment eliminates mixing of secticides with fertilizer and appl dry granular insecticides dur planting. The attachment mounts either 2- or 4-row planters. Desig

to mount between seed cans, the u delivers metered quantities of granular chemicals to the fertili boots through flexible metal tu Adapters connect insecticides and tilizer tubes. A split sprocket cla to the fertilizer drive shaft to d the chemical applicator. A gauge the chemical hopper allows setting various application rates. Se more complete details by check No. 6251 on the coupon and dropp it in the mail.

No. 5182—Grain Protectant

A new liquid grain protect claimed to be the first product of kind for the prolonged protection stored grain from insects, has b introduced by the Douglas Chem Co. Called Tetrakote, the protect is being placed on the market a several years of cooperative resea with the entomology department Kansas State College. Tetrakote applied to the grain as it is harves and is moved to farm storage. It residual spray which is said to protection to the grain for periods to 12 months at a low cost. formula consists of ethylene te chloride, petroleum distillate, pip onyl butoxide and pyrethrins. Te kote is being marketed to farm and grain men through feed sto elevators and other farm retail lets. It is commercially applicable terminal and country grain elevat mills, seed houses, bean plants, and hominy mills. It may be used any grain, rice, beans, popcorn garden and field seeds. For compl information regarding the sale or of these products please check 5182 on the coupon and mail it.

No. 6255—Chemical Booklet

Its family of chemical products agriculture are depicted in words pictures in a booklet, "The St of the Chemicals You Live By," p lished by the Diamond Alkali The booklet, in its fourth editi contains 24 pages and one entire tion is devoted to herbicides and secticides manufactured by the c pany. The booklet is available w out charge. Check No. 6255 on coupon and drop it in the mail.

No. 6254—Insect Display Box

An insect display box designed an entomologist to aid in the id tification of common cereal pest offered by the Mid-Western Sp Chemical Co., Inc. Produced by Bio-Preparations Co., the box i in. wide, 12 in. long and 2 in. d It contains 12 detailed and enlar color drawings of these pests in adult and larval stages. Three a al specimens of each pest are mo ed on pins in the box. Insects sh include the rice weevil, gra weevil, lesser grain borer, the

Send me information on the items marked:

☐ No. 5138—Pump	☐ No. 6168—NH_3 Hoses
☐ No. 5163—Gross Bagger	☐ No. 6249—Metering Device
☐ No. 5164—Bag Opening Device	☐ No. 6251—Planter Attachment
☐ No. 5174—Bag Printing	☐ No. 6252—NH_3 Applicator
☐ No. 5175—Fly Control	☐ No. 6253—Herbicide
☐ No. 5182—Grain Protectant	☐ No. 6254—Insect Display Box
☐ No. 6164—Crabgrass Film	☐ No. 6255—Chemical Booklet
☐ No. 6167—Bulletin	☐ No. 6260—Meter

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beetle and the cereal mite. Be-
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ure price and other information
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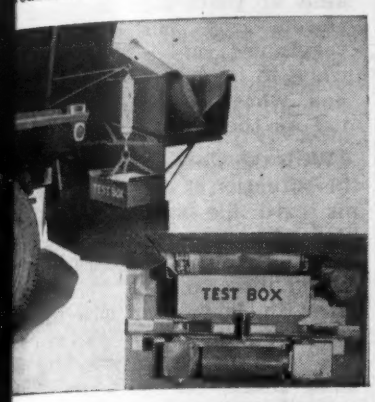
o. 6249—Metering evice

The Highway Equipment Company,
., is producing a new metering
vice for commercial fertilizer
readers. The unit fits all late model



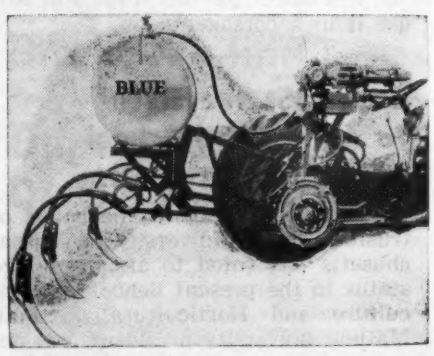
New Leader" agricultural spreaders
ade by the company. The device
easures the amount of fertilizer be-
ing fed to the twin distributor discs and provides a simple method of obtaining the correct feedgate setting. It is said to be easy to install and accurately meters from 100 lb. per acre on up. Full information and prices may be had—at no obligation—by checking No. 6249 on the coupon and mailing it to this newspaper.

No. 5175—Fly Control Products

The special products division of Mutual Products Co. has announced a new line of fly control chemicals. All products in the line carry the name of SK Surekill Brand. They are available in one, five and 53-gal. metal containers with tamper-proof pouring spouts. The 55% Malathion concentrate is available in pint bottles. For those who prefer to use Malathion in a granular form, five, 10 and 25-lb. moisture-proof packages are available. National distribution is planned. Secure more complete details by checking No. 5175 on the coupon and mailing it to this newspaper.

No. 6252—NH_3 Applicator

The John Blue Co. has recently announced the addition to its line of a new series of tractor mounted anhydrous ammonia applicators for use with rear mounted tool bars. Tanks (with capacity up to 100 gal.) are mounted directly on the tool bar. The Blue metering pump is mounted directly over the rear axle housing where it is accessible to the operator. The firm's line of applicators includes the spring tine which is suitable for



side dressing and top dressing requirements and the more durable spring trip shank, which is suitable for tougher ground. Available for the first time is a line of rigid, truss frame type shanks for tough soil conditions where excessive deflection

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Complete with 4-oz. package of Donaco Pival Dry Meal Bait —(enough to kill 40 mice!)

A safe highly efficient bait station designed specifically for mice. Far superior to any trap. Package fits into station—releases bait into trough as mice feed. Station is 2 7/16" high x 6" wide x 5" deep.

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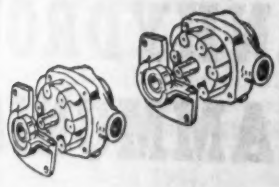
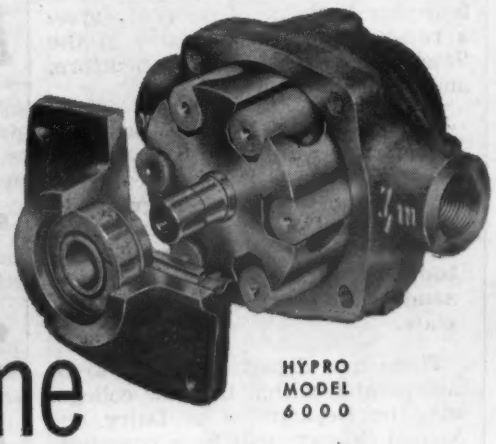


only two came home



Here's a quick check on HYPRO Sprayer Pumps that can mean greater customer satisfaction and higher profits for you. HYPRO'S Sprayer Pump line of 4 sizes is not only designed and priced to *sell* but also engineered and built to *stay sold*. Out of 3,000 sprayers with HYPRO pumps sold by one manufacturer last season, only 2 pumps were returned for servicing. Big figures? Yes, but a tiny "return" percentage that adds up to "satisfied customers." That's because HYPRO Sprayer Pumps are built to *last*. To take that "over the fields" pounding and still operate perfectly with either wettable powder or emulsifiable spraying materials *all* with minimum maintenance attention. Now HYPRO offers 4 sprayer pump sizes; *your* answer to all of your customers' spraying pump requirements. Capacities from 5 to 65 gal. per min. Each pump is individually tested and must meet the rigid, quality standards that's made HYPRO the most respected name in farm sprayer pumps.

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The Bulletin Board

No. 10 in a series from the Spencer Chemical Company Magazine, "Today's Fertilizer Dealer"

Meet the inventor, Irv Hansen (right), who contrived the soil auger so Dealer Gordon Dennis (center) could bore himself out of a hole! That's Dean McGrew, Gordon's partner, stirring a sample at left.

How These Nebraska Dealers Mechanized Soil Sampling

By JOE E. TUNING
Spencer Representative for Nebraska

When Dealer Gordon Dennis and his part-time partner, Dean (Dangerous Dan) McGrew, take off across the fields in their pickup, they may look like fugitives from a Rube Goldberg cartoon. But actually they're pioneering one of the hottest mechanical gadgets to hit the fertilizer trade in many a moon.

It's a mechanical soil sampling auger, and it's actually bored them out of a hole! One day Gordon found himself stuck with a whole raft of soil sampling orders, and the ground was frozen so solid he could hardly sink an auger.

At that time, Augie, the mechanical auger, was born. Gordon discovered that with this little gadget he could sample as many as ten different fields in an afternoon, at eight or more borings a sample! One day he sampled four farms in 2½ hours—taking about 25 borings on a farm—and the farms were as much as nine miles apart!

They say necessity is the mother of invention, and here's how the necessity arose: Gordon, who operates the Dennis elevator at Randolph, Nebr., attended a state dealer meeting in January at the University of Nebraska. There he learned that his county (Cedar) was very low in soil sampling.

He came back from the meeting wondering how to stimulate sampling. He settled on a double postcard saying in effect, "We will sample your soil free of charge. You pay only the university fee for the test." All the farmer had to do was send in the reply card.

The cards came in too fast, however, and it appeared that the project would sag from over-ambition. That's when Gordon and Dean went to Irvin Hansen, who runs a machine shop in Randolph.

In Irv's shop the brainchild was born—an auger attached to the four-speed transmission of a pickup truck. At a blacksmith's shop Irv found a high-speed bit, made his own gear box from spare parts (the gear box allowing the bit to be engaged or disengaged without turning the machine off), and connected this contraption to the transmission by a flexible drive shaft.

The big advantage of the mechanical auger is the speed with which Gordon can flit around and take samples. Also, with this mobile rig it's easy for the farmer to go along and help pick the sampling areas.

How much did the auger cost? Irv doesn't know. Most of it was made from spare parts around the machine shop. Right now he's in the process of patenting his auger in the hope of getting it produced in quantity.

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is a problem. These applicators will fit any size tool bar from 1¾ inch to 2¼ in. Tractor mountings are also available. To secure more complete information check No. 6252 on the coupon and mail it.

No. 5174—Bag Printing

Samples of bag printing using the "texture" process as well as the halftone method are available from the Fulton Bag & Cotton Mills. The company's texture process is known as Ful-Tone printing and is for use on multiwall paper bags. The reproduction of natural, lifelike pictures that result in more realism is claimed for the texture process. To secure samples of both methods of printing check No. 5174 on the coupon and mail it.

No. 5163—Gross Bagger

A new two-color data sheet, offered by the Richardson Scale Co., describes and illustrates the company's manually-operated gross bagger. Equipped with an automatic cut-off device, this recently-developed bagger scale fills and weighs either textile or multi-wall paper bags in capacities of 50 to 140 lb. To secure a copy of the data sheet check No. 5163 on the coupon and drop it in the mail.

No. 6253—Herbicide

Available in limited quantities is the new herbicide, Amino Triazole, produced by the American Cyanamid Company's agricultural chemicals division. A leaflet suggesting its use on Canada thistle, quack grass and other weeds is available. The company states that it has been granted acceptance of an "experimental label" which permits the firm to sell small quantities for testing purposes. To secure more complete details about securing a quantity of this herbicide, cost and available literature, check No. 6253 on the coupon and mail it to this newspaper.

No. 5138—Pump

Maintaining a constant volume of flow despite fluctuations in water pressure is the function of a new variable cavity pump built by Hypro Engineering, Inc. When the pressure in the pump reaches a predetermined point, a spring loaded end plate moves outward, increasing the length of the pump cavity and enlarging the clearances between the ends of the rotor and the end plate varying the pressure. To secure more complete details about this pump check No. 5138 on the coupon and mail it.

New Farm Course

DURHAM, N.H.—A four-year program of study in mechanized agriculture leading to a bachelor of science in agriculture degree and including courses in the social sciences and business administration will be offered by the University of New Hampshire's Agricultural Engineering Department, announces Prof. Robert S. Palmer department chairman. The curriculum has been set up to prepare students for occupations in the sale and service of farm equipment, irrigation systems and farm building materials.

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Asparagus to Get Glamor Treatment In Massachusetts

BOSTON—Massachusetts may be known as "the asparagus state" instead of the "land of the bean and the cod," especially if the Massachusetts Department of Agriculture has its way.

The department has decided to give the lowly asparagus a thorough glamor treatment designed to boost crop sales—it may even go on TV.

Walter E. Piper, state departmental marketing specialist, called the vegetable "the lily of the valley" in a report to the state legislature. He said the asparagus is a member of the lily, or Liliaceae family, a cousin to the wild lily-of-the-valley.

The state's Connecticut River Valley produces more than three fourths of the Massachusetts crop, and the process of cutting, packing and shipping is carried on with such speed, Mr. Piper said, that the vegetable is delivered "often still cool with valley dew."

Concluding, he said: "Asparagus, we love you, botanically, commercially, dietetically, yours is an interesting story. Yes, in truth, you are the lily of the valley."

After hearing the report, one legislator said, "This is truly a case of gilding the lily," while another said, "If you don't like the stuff, you can use it in a corsage."

College Status Given To Agricultural School At U of Massachusetts

AMHERST, MASS.—The board of trustees of the University of Massachusetts has voted to assign college status to the present School of Agriculture and Horticulture. J. Paul Mather, university president, has announced that, effective July 1, the school's title will be changed to that of "College of Agriculture" in accordance with the trustee's ruling.

The newly-designated college will consist of 13 departments upon the completion of current reorganizational plans. Its instructional program will be conducted on three levels—a four-year bachelor of science course, a two-year vocational course in the Stockbridge School of Agriculture, and graduate studies.

Integrated with these instructional units will be the Experiment Station, the College's Research branch, the Control or Regulatory Service, and the Cooperative Extension Service, an agency specializing in agricultural, home economics, and youth education in the state.

Three new departments are to be incorporated within the new college; one, the Department of Dairy and Animal Science, will be a consolidation of two previous departments, Dairy Industry and Animal Husbandry; another, Agricultural Engineering, was formerly a part of the School of Engineering in the University; and a third component, Agricultural Communications, will be added to the reorganization.

SOIL STUDY

NEW HAVEN, CONN.—Studies by the Soils Department of The Connecticut Agricultural Experiment Station show that many Connecticut soils to plow depth have lost a third of their organic matter, one eighth of their nitrogen, and that the cultivated soils weigh two and a half times more than forested ones. The poorest of the cultivated soils weigh 40% more than the best.

PENNSYLVANIA DEAL

(Continued from page 9)

fertilizer prospects. Mr. Bernard call or pay a visit on the prospe and talk about their current rais problems. The conversation fina gets to fertilizer. "Sooner or late he says, "we start getting some their business. Then we try to bu up the volume they buy."

The same practice in selling pes cides is followed by this aggressi dealer. He knows the insects a kind of pests that are found various crops, bushes, flowers a vegetables raised in the locali when to be on guard against the and what particular pesticide use on them.

With the start of each season w this situation is due, he goes throu his card file again and mails literature to customers whom suspects will be troubled by the p ticular insect or pest. This is bac up with newspaper advertising serted as a warning. As radio sp are used consistently by the S shine Store, the spots are "slant towards this same situation.

"Most of our customers will us what they are troubled with ask us to make a recommendatio says Mr. Bernard. "And we han this situation the same as we with fertilizer. We know what inse cides to use for the particular cr flower, trees or bush and can m recommendations accordingly."

The majority of these custom visit the store for this informat and Mr. Bernard provides them w the selected item.

"If a customer is troubled o with a certain insect, there is strong possibility that there may a re-occurrence," he says. "Our r ords help us to select the most sui item for the customer's use and knowledge is increased by hear about the results from the custom

Mr. Bernard has been in busin for more than 10 years and has joyed increased store traffic and s volume annually. That is because knows his merchandise, has mad study of local conditions and han every customer's problem on an dividual basis.

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nks' Farm Representatives Honored Spencer Chemical Company Seminar

By JAMES W. MILLER
Croplife Editorial Staff

ANSAS CITY—A farm represent- e seminar, sponsored by Spencer mical Co. for the purpose of dis- ing the functions of "FR's" (farm resentatives of banks), was held June 1-3.

n attendance were FR's selected m the states of Minnesota, South kota, Iowa, Illinois, Kentucky, nsas and Oklahoma. The leading in each of these states was se- ted by the bank publication serv- the state in collaboration with the te bankers association and the te agricultural college.

The seminar emphasized the fact at banks in small farming com- unities as well as institutions in rger cities where a good share of eir income is derived from agri- ulture, are finding that a bank epresentative with farming know- ow is a major asset.

t also pointed up the fact that se financial direction, coupled with oper agricultural advice, leads to tter business in agricultural prod- ts such as fertilizers and other terials the farmer buys.

In view of this, Spencer Chemical . has instituted the annual Dis- guished Farm Banker awards and Farm Bank Representative semi- r. FR's chosen to attend the semi- r included Tony L. Westra, North- st Security National Bank, Sioux lls, S.D.; Carl L. Cramton, Security nk, Ponca City, Okla.; Warren R. ngfitt, Centerville (Iowa) National nk; John P. Perrier, First Na- nal Bank, Dodge City, Kansas; R. Bird, Goodhue County National nk, Red Wing, Minn.; Ryan Mason, rst City Bank & Trust Co., Hop- nsville, Ky., and John Hardimon, te Bank of Bement (Ill.).

The seminar answered the ques- ion of "What is a farm representa- ive?" by describing him as a spe- ially trained banking representa- ive with an agricultural back- round who can advise on farm in- estments.

Aggressive banks in farming areas e turning more and more to FR's increase their service to farmers, us making more credit available to rmers.

Tony L. Westra was cited as an ample. A former county agricul- ral agent who majored in agricul- ral economics at Michigan State ollege and later attended South Da- ota State College, he opened the rm service department of the North- st Security National Bank at ioux Falls, S.D., in 1944. During the st ten years, this department of e bank has grown to include five ained men in agriculture and Mr. Vestra is now a vice president of the nk.

Chairman of the South Dakota Bankers Assn. for the last six years, Mr. Westra has been a mem- ber of the American Bankers Assn. agricultural livestock committee for two years and chairman of the Upper Midwest Agricultural Credit Council two years. He is a graduate of the Rutgers school of banking and received recognition for his thesis, "The Western Corn Belt Cattle Feeder and His Banker."

For the past three years Mr. Wes- ra has been an instructor at the raduate school of banking, Univer- ity of Wisconsin.

He was given the "outstanding oung man" award for Sioux Falls n 1951. He is a director of the Sioux mpire Fair Board, a member of he Greater South Dakota Agricul- ural Committee and of the Industrial Committee for South Dakota.

The other men chosen for the Spencer seminar have similar back-

NITROGEN

(Continued from page 1)

on the nitrogen front. These of- ficials point to the almost ten-year period of rising consumption of fertilizer material, with nitrogen far out in front. It is true that for the past two years fertilizer consumption seems to have reached a sales plateau, but this plateau is substantially higher than any sales level of pre-World War II.

While mildly optimistic about the broad future for the fertilizer in- dustry, USDA officials admit that the next two years for the nitrogen people may be a period of abated de- velopment. First they see the neces- sity for a clarification of over-all farm policy which will find its test- ing ground in the 1956 elections, and next the attitude of farmers if and **when the economy** determines future farm policies.

Conservatively, USDA officials feel that it will take two years for the farm economy to absorb the expan- sion of synthetic nitrogen in farm fertilizer materials.

The testing ground will follow when the farm economy adjusts itself to a projection of the Ben- son farm program if it is con- firmed in the 1956 elections. Con- siderable acreage would be taken out of the Great Plains states to be turned back to pasture and for- age crops. On the other hand, the great weight of the wheat surplus which ultimately will have to be dumped in feed channels, can stim- ulate an expansion of cattle pro- duction.

USDA officials, with a long range nose for optimism, believe that if all necessary corn producers used the optimum requirements of nitrogen that even the unlikely production level of more than 4 million tons by Jan. 1, 1957, would not maintain meat production at demand levels.

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WORLD REPORT

Industry News from Everywhere

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

Insecticides are playing an important part in improving the economies of foreign countries. The ever-growing populations mean that more food must be taken off the land if the standard of living is to be maintained and, indeed, improved.

It takes time to sell growers on the benefits arising from the regular use of agricultural chemicals. The accent should be on the word "regular" for monetary considerations often mar what should be an intensive and sustained program.

Peruvian farmers had a practical lesson in the value to be derived from insecticides when an experiment on three selected farms showed an increased yield of 400% after spraying operations.

Peru has also developed the successful control of leaf-cutting ants thus cutting back damage, amounting to 95% of the crop on some holdings. Controls are now being developed for wooly aphids and it is expected that when applications reach the required level the apple crop will be doubled.

Peru is not alone in making advances of this nature. In Honduras a grasshopper plague was checked by insecticides while the spraying of vegetables in Haiti increased yields by 40%. In Iran, pistachio trees which have been unproductive for 18 years, due to insect infestation, are now bearing a nut crop valued at $3 million after spraying operations.

The use of insect control chemicals on beans in Libya increased the crop by 50%. From Indonesia comes a report that potato yields were boosted by 80% after treatment while the rice crop in Formosa was hiked 30%.

Publicity Success

Three years ago the British Fertilizer Manufacturers' Assn., in conjunction with the Superphosphate Manufacturers' Assn., initiated a publicity and public relations progra The program had an encouraging r ception and activities are to be e tended.

In future FMA is to be responsib for the work, and it will be support by bodies representing producers basic slag, nitrogen, potash and supe phosphate. The executive conduct the arrangements will be in the han of Graham Cherry, who has been r sponsible for many phases of t recent developments. Mr. Cherry, journalist and author, has worke with a number of British agricultur organizations, including the Nation Farmers' Union and the Anim Health Trust.

Canadian Nitrogen

Construction on the new $23 mi lion fertilizer plant for Northwe Nitro-Chemicals, Ltd., at Medici Hat, Alta., is scheduled to sta towards the end of June. The pla will produce high analysis nitrog and phosphate fertilizers processe from natural gas. Operations w start late in 1956.

Northwest Nitro-Chemicals is th Canadian subsidiary of Commercia Solvents Corp. of New York. The construction contract for most o the work has been awarded to Ford Bacon & Davis Associates, New York. A chemical storage and processing plant will be built also.

Two new projects have just starte up in Canada's eastern province Ontario. North American Cyanami Ltd., has announced the start of pr duction at its new plant at Port Ro inson with an output this year 15,000 to 20,000 tons liquid nitroge with the possibility of considerabl increase in future years. Dow Chem ical Co. of Canada has also starte up its ammonia plant at Sarnia. Ou put is 80 tons a day.

The price of North American Cya amid's nitrogen solution is reporte in trade circles to be $100 ton whil Dow's anhydrous ammonia is state to be $200 ton.

Weed Problem

Western Canadian farmers ar complaining of heavy weed infest tion following heavy rains that de layed seeding operations. In man districts weather conditions have no been favorable for chemical sprayin to control weed growth because th soil is too wet to carry the equip ment.

New Company

Plans are being made in New Ze land for the formation of a new fe tilizer manufacturing company to b called Southland Fertilizer Co., Lt Sharing in the project are two firm New Zealand Drug Co., Ltd., an the Dominion Fertilizer Co., Ltd.

A phosphate and mixed fertilize plant is to be erected at Southland within the next 18 months, officials announce. The cost is expected t be in the region of $2.8 million.

Cresco Fertilizers, Ltd., which h two plants in Australia with an an nual output of 600,000 tons fertilizer is making plans to enlarge its ac and superphosphate plant at Po Lincoln, South Australia.

General Fertilizers, Ltd., Brisban Queensland, is planning to raise ne capital to facilitate the erection a plant in northern Queensland. Tra ing has been at record levels in r cent months, but could have bee better if adequate transport faciliti had been available to the compan officials state.

An acute shortage of railway truck prevented the company shipping fe tilizer into the north at a time whe growers needed it most.

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MEETING MEMOS

ne 12-15—Joint meeting, American Plant Food Council, Inc. and National Fertilizer Assn., Greenbrier Hotel, White Sulphur Springs, W. Va.; Paul T. Truitt, American Plant Food Council, 910 17th St. N.W., Washington, D.C., in charge of registration.

ne 14-16—Symposium on Fertilizer Economics Research, Sponsored by Agricultural Relations Division of TVA, Knoxville.

ne 15-17—American Seed Trade Assn., 72nd Annual Convention, Minneapolis.

ne 16—Oklahoma Plant Food Assn., Annual Meeting, Hotel Tulsa, Tulsa, Okla.

ne 21—Western Agricultural Chemicals Assn., Spring Meeting, Clark Hotel, Los Angeles; C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., Secretary.

ne 22—Pacific Slope Branch, Entomological Society of America, Mission Inn, Riverside, Cal.

ne 22-24—Association of Southern Feed & Fertilizer Control Officials, Jung Hotel, New Orleans.

ne 24-26 — Delmarva Peninsular Fertilizer Assn., Annual Convention, George Washington Hotel, Ocean City, Md.

ne 27-29—North Central Branch, American Society of Agronomy, Summer Meeting, Ames, Iowa.

ne 28-30 — Sixth Annual Pacific Northwest Plant Food Assn., Regional Fertilizer Conference, Boise Hotel, Boise, Idaho; Leon S. Jackson, 702 Lewis Bldg., Portland, Ore., Secretary.

ly 5-8—Plant Food Producers of Eastern Canada, Bigwin Inn, Muskoka, Canada.

ly 14-15—Southwest Fertilizer Conference and Grade Meeting, Buccaneer Hotel, Galveston, Texas.

ly 20-21—Great Plains Agricultural Ammonia Assn. Midwest Trade Show & Field Day; Business Session for Members July 20 at Hotel Fort Des Moines, Des Moines, Iowa; Field Day July 21 near Ames; James Andrew, Box 447, Jefferson, Iowa, Secretary.

ly 27-29—Northeast Branch, American Society of Agronomy, University Park, Pa.

g. 8-10 — Summer Meeting of North Central Division, American Phytopathological Society, Wooster, Ohio; further information from H. C. Young, Dept. of Botany & Plant Pathology, Ohio Agricultural Experiment Station, Wooster, Ohio.

g. 9-11—Ohio Pesticide Institute Meeting and Field Tour, Wooster, Ohio; Dr. J. D. Wilson, Ohio Agricultural Experiment Station, Wooster, Secretary.

g. 10—Kentucky Fertilizer Conference; Guignol Theatre, University of Kentucky, Lexington.

g. 15—National Joint Committee on Fertilizer Application, Cooperative Meeting with the American Society of Agronomy, University of California, Davis Campus.

g. 15-19 — American Society of Agronomy and Soil Science Society of America, University of California, Davis Campus.

g. 15-20—Farm & Home Mechanization Pageant, Michigan State College, East Lansing, Mich.

pt. 7-9 — National Agricultural Chemicals Assn., Spring Lake, N.J.; Lea S. Hitchner, NAC Executive Secretary, 1145 19th St. N.W., Washington 6, D.C.

pt. 7-9 — Ninth Annual Beltwide Cotton Mechanization Conference, Memphis 1, Tenn.

Oct. 17-18 — Fertilizer Section, National Safety Congress, LaSalle Hotel, Chicago; Thomas J. Clarke, Chairman.

Oct. 27—Middle West Soil Improvement Committee, Annual Meeting, Sherman Hotel, Chicago; Z. H. Beers, Executive Secretary, 228 N. LaSalle St., Chicago, Ill.

Nov. 2-3 — Annual Convention, Pacific Northwest Plant Food Assn., Pilot Butte Inn, Bend, Ore.; Leon S. Jackson, 702 Lewis Bldg., Portland, Ore., Secretary.

Nov. 3-4—Northeastern Division, American Phytopathological Society, Eastern States Farmers Exchange, Inc., 26 Central St., West Springfield, Mass. B. H. Davis, Department of Plant Pathology, Rutgers, University, New Brunswick, N.J., secretary.

Nov. 7-8—California Fertilizer Assn., Thirty Second Annual Convention, Hotel Mark Hopkins, San Francisco; Sidney H. Bierly, Executive Secretary & Manager, 475 Huntington Drive, San Marino, Cal.

Nov. 17-18—Nitrogen Solution Field Day, National Nitrogen Solution Assn., State Armory, Springfield, Ill.; Roy F. Broyhill, Dakota City, Neb., meeting chairman.

Nov. 29-Dec. 2 — Entomological Society of America, Netherlands Plaza Hotel, Cincinnati.

Dec. 5-7—Chemical Specialties Manufacturers Assn., 42nd Annual Convention, Roosevelt Hotel, New York; H. W. Hamilton, 50 E. 41st St., New York 17, N.Y., Executive Secretary.

Dec. 5-7—Agricultural Ammonia Institute, Kansas City; Jack F. Criswell, Executive Vice President, Claridge Hotel, Memphis, Tenn.

Dec. 15-16—Beltwide Cotton Production Conference, Hotel Peabody, Memphis, Sponsored by the National Cotton Council.

Dec. 28-30 — American Phytopathological Society, Atlanta, Ga.; Glenn S. Pound, University of Wisconsin, Madison, Wis., Secretary.

1956

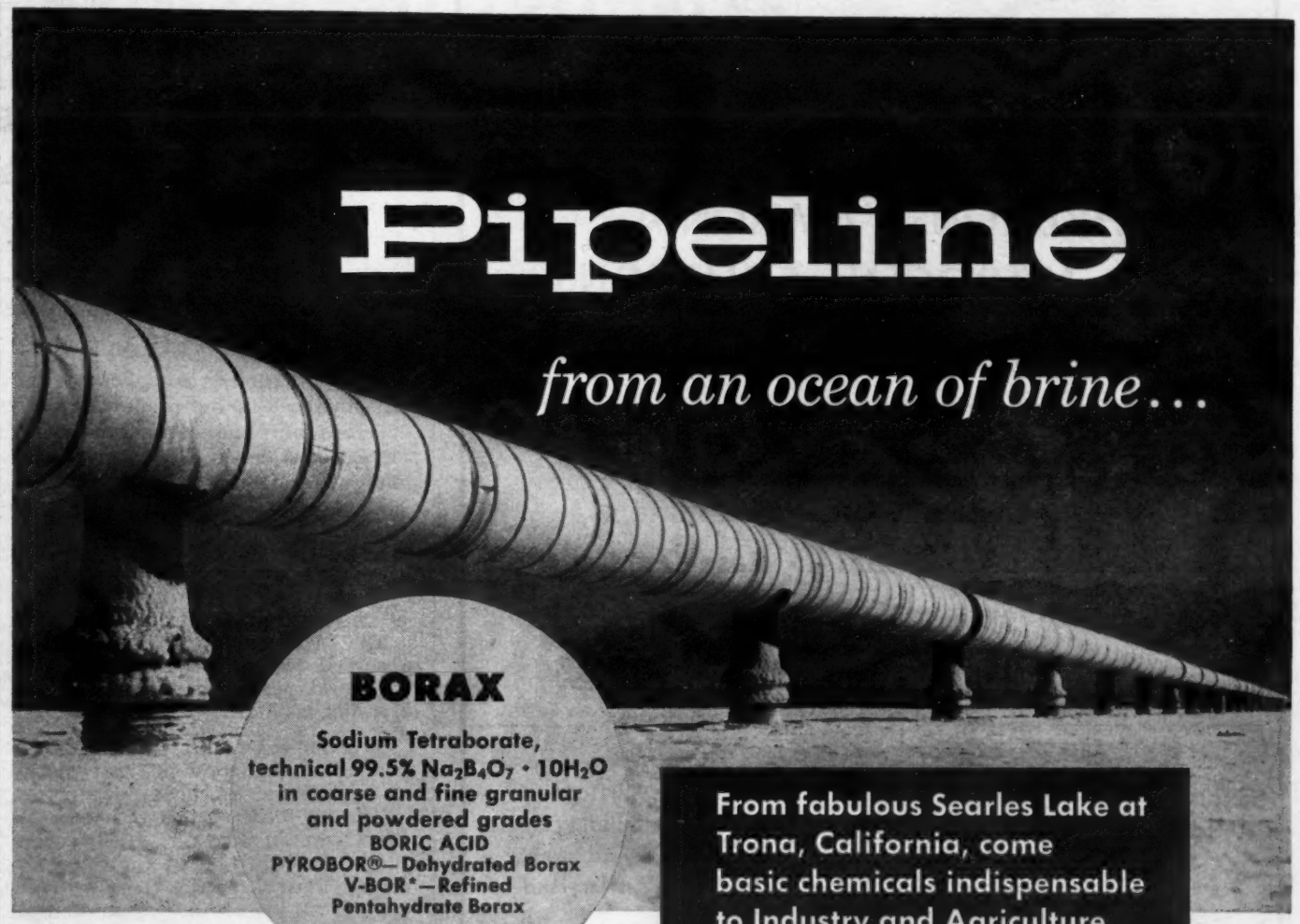
Jan. 4-6—Weed Society of America, Charter Meeting, Hotel New Yorker, New York, W. C. Shaw, U.S. Department of Agriculture, Beltsville, Md., Secretary-Treasurer.

Jan. 26-29 — Agricultural Aircraft Assn., Inc., Sixth Annual Convention, Wilton Hotel, Long Beach, Cal.; Wanda Branstetter, Route 3, Box 1077, Sacramento, Cal., Executive Secretary.

Feb. 15-17—California Weed Control Conference, Sacramento and Davis, Cal.; Oliver A. Leonard, Botany Dept., University of California, Davis, Cal., Secretary.

Pipeline

from an ocean of brine...



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SUPER OUTPUT

(Continued from page 1)

ble 1953 output in parenthesis) included:

Normal and enriched superphosphate, 1,644,515 short tons (1,678,459); concentrated superphosphate, 561,870 (457,235); wet-base goods, 8,325 (11,768).

Shipments during 1954 totaled 1,355,068 short tons, compared with 1,292,089 in 1953. This included (1953 figures in parenthesis):

Normal and enriched, 847,759 short tons (850,970); concentrated, 500,194 (433,097); wet-base goods, 7,115 (8,022).

Stocks on hand at the beginning of 1954 totaled 290,794 short tons and those on hand at the end of the year were 326,579.

The data were reported from 213 plants making normal and enriched, 21 making concentrated and six making wet-base goods.

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(See Story on Page 1)

Yield of Seed Cotton From Treated and Untreated Plots in Central T from 1939 to 1954

Year	No. of experiments	No. of Plots		No. of Acres		Ave. No. of applications	Ave. Pounds Seed Cotton Per A			
							Yield		Gain	
		Untreat	Treat	Untreat	Treat		Untreat.	Treat	Pounds	Pe
1939	10	44	56	16	28	4.6	615	676	61	9
1940	10	47	47	14	49	5.2	767	922	155	20
1941	14	52	52	15	15	7.0	523	1088	565	108
1942	18	51	48	18	25	5.7	874	1039	165	18
1943	11	35	35	10	13	5.1	1166	1307	141	12
1944	8	29	29	10	10	4.6	831	1095	264	31
1945	11	29	32	11	60	5.3	941	1311	370	39
1946	15	36	36	28	43	5.9	403	1034	631	156
1947	18	34	44	50	111	4.5	699	907	208	29
1948	21	55	89	57	231	4.9	483	830	347	71
1949[1]	17	26	35	485	597	5.4	828	1350	522	63
1950[2]	20	57	83	1089	3826	4.7	1036	1357	321	31
1951	21	37	50	64	145	4.1	539	697	158	29
1952	28	50	93	76	117	4.7	560	810	250	44
1953	26	44	146	80	333	4.5	791	1054	263	33
1954	18	31	111	69	216	2.9	446	578	132	29
Totals	266	657	986	2092	5819					
Average						4.9	719	1033	284	39

[1] Includes 4 untreated and 6 treated farms.
[2] Includes 17 untreated and 36 treated farms.

NITROGEN PRICES

(Continued from page 1)

then an improvement has taken place, Aikman comments. It predicts that stocks will not be high despite a production increase but that they will be high enough to warrant some price reductions.

The situation is complicated by the increase in the productive capacities of some other countries. Expansions have been announced in Canada, Italy, France, Holland and Norway, while new plants are being planned or brought to completion in Mexico, Brazil, Peru, Puerto Rico, Colombia, Turkey, Pakistan and India.

The increased production may be absorbed by the underfed areas of the world, particularly in view of increasing populations, Aikman states.

It is pointed out in the report that increased production has not materially affected world export prices which are more or less the same as they were in June, 1954. However, the probability is that for the year ending June 30, 1955, there will be an over-all increased consumption of 9.3% of which Europe will account for 6½%, the U.S. 13% and ot countries 8%.

U.S. production in 1957-58 is es mated by the London firm around 3.6 million metric tons. T 1954-55 figure is set at 2,425,0 tons, 1955-56 2,850,000 tons and 1956-57, 3.2 million tons.

On the basis of this increase, scribed by the firm as "formidab the U.S. will have to increase eit its consumption or its exports.

Dealing with trade in other pa of the world, Aikman notes t large sales have been made to Ch with payment made out of the co try's own resources. Hitherto, n ing but ammonia sulfate has b used. Now Red China is buying cium ammonium nitrate in he amounts, mainly because it could get all the ammonia sulfate requi

The availability of U.S. governm funds has enabled South Korea Formosa to buy more nitrogen w American credits have also boos business with India, Pakistan Greece.

The Canadian hike in product is estimated at 50,000 tons by 19 58 while Europe, with Egypt, w provide another 450,000 tons. Ita Holland and France account 300,000 tons of this increase. Ot countries may raise their prod tion totals by 300,000 tons, Aikm considers.

According to recent statement Moscow, Aikman suggests that Russian production and consump of nitrogen is in the region of 600 tons a year. Plans have been m to increase the output during next five years, it is stated.

Officers Named f New Potash Firm

DENVER — Officers and direc of the new potash corporation, F Chemicals Resources Developm Corp., have been named as follow

Chairman of the board, Jame Patton, Denver; vice president, C Huff, Denver; secretary, Charle Brannan, Denver; treasurer, J. Lollar, Oklahoma City; assistant retary, F. C. Love, Oklahoma C assistant treasurer, Glenn J. Tal Jamestown, N.D.

Directors, Harvey R. Solberg, D ver; Sen. Robert Kerr and D. A. Gee, Oklahoma City, and W. Keeler and T. L. Cubbage, Bar ville, Okla. A president has not b named yet.

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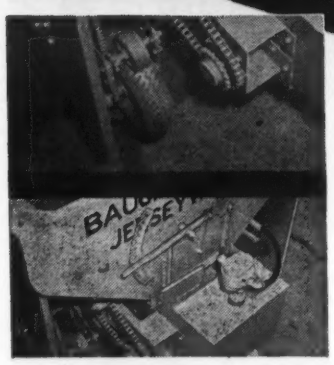

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INSECT, PLANT DISEASE NOTES

(Continued from page 5)

rgence still strong. Larval activ-
n the orchard is lagging behind
in the cages.

ed-banded leaf roller first brood
vae are more numerous in or-
rds in central Indiana (Linton,
ford and Mooresville) than dur-
the past two seasons. Larvae
beginning to pupate. Some or-
rds will need second brood pro-
tion, probably about June 20.

riental fruit moth twig injury in
erous plantings from first brood
al activity is high. Most of the
ae have left the twigs and are
ated. A few fresh twig injuries
e observed in the vicinity of Lin-
and Carlisle, Indiana on May 25.
ond brood moth attack will likely
heavy where heavy twig injury
ts, and moths will move into
ks with fruit on them from the
ks with no fruit.—D. W. Hamil-

rn Borer Active Iowa Fields

MES, IOWA—On June 1 in Dela-
e County there was 91% pupation
53% emergence of European corn
er. No eggs were seen on 20 inch
n. In Hamilton County, June 2,
re was an average of 38% emerg-
e with 10 egg masses per 100
nts on 18-20 inch corn, no eggs on
2 inch corn. In Story County, June
after a heavy moth flight during
night of June 2), there were 55
egg masses per 100 plants on 20
corn.

t the Ankeny Corn Borer Lab
re are 65 masses per 100 plants on
inch corn. In northwest Iowa,
re is 40% emergence. No eggs
e found on 10-12 inch volunteer
in soybeans in southwest Iowa.
warm weather continues, hatching
be generally under way in cen-
Iowa by June 10 and in northern
a by June 18. Much of the tall,
orously growing corn will have
ugh leaf feeding to justify treat-
nt by June 10 in central Iowa.

orn leaf aphids are beginning to
d up on corn. Their appearance
also early, like everything else.
vy infestations are suspected of
ing some influence on barrenness
corn. Corn flea beetles were seen
8 inch corn in Delaware County,
raging 3 per plant. These small
k beetles eat off one surface of
leaf and carry bacterial wilt or
wart's disease of corn. Wireworms
active in a number of fields in
theast Iowa.

ean leaf beetle is attacking soy-
ns in Polk, Jasper, and Marshall
nties. Potato leafhoppers arrived
arge numbers in central Iowa on
e 1. They are suddenly abundant
lfalfa, corn and potatoes. Watch
ond cutting alfalfa for nymphs
signs of damage.

rasshoppers are present in one
bean field in Page County at the
e of 10 per square foot. Damage
severe. These were young hop-
s and are easy to control with
dosages.

rasshoppers in lawns may be seri-
In southern Iowa, large numbers
present as small nymphs. Treat-
nt now is cheap, with low dosages
y effective. Any of the recom-
nded materials will also help to
trol other lawn insects. Red spider
working on evergreen windbreaks,
pine leaf scale eggs have hatched
crawlers can be controlled effec-
ly.—Harold Gunderson.

ack Picture" Describes ssouri Grasshoppers

OLUMBIA, MO. — Some army-
m damage continues in the cen-
third of the state although ac-
y has slowed a little. Heads of
ey are still being cut off; some
ds of wheat and rye are being cut
more generally the barbs and
tions of the grain are partially
destroyed. Undercover crops of legumes and grasses in small grains are either heavily damaged or destroyed in many fields even though the small grain is not being damaged.

Parasites are now destroying considerable numbers of the larger worms. Both wasps and flies are numerous. With the return of warm weather, these parasites are expected to largely eliminate the armyworm problem during the coming week.

It is hard to discuss the grasshopper situation without painting a very black picture for agriculture throughout most of the state. Populations are tremendous, ranging from 20 to over 200 per square yard of the hatching beds. The peak of the hatch of the large, yellow hopper has passed in the southern half of the state and is expected to be reached in the northern half of the state during the coming week. Weather cannot be counted on to aid materially in reducing hopper numbers.

Damage to alfalfa, soybeans and garden crops has already started. Second cutting alfalfa is being heavily damaged in several areas. These alfalfa fields should be sprayed immediately but be sure there are 21 days between treatment and cutting. Hoppers are beginning to spread out from the hatching beds in the southern half of the state.

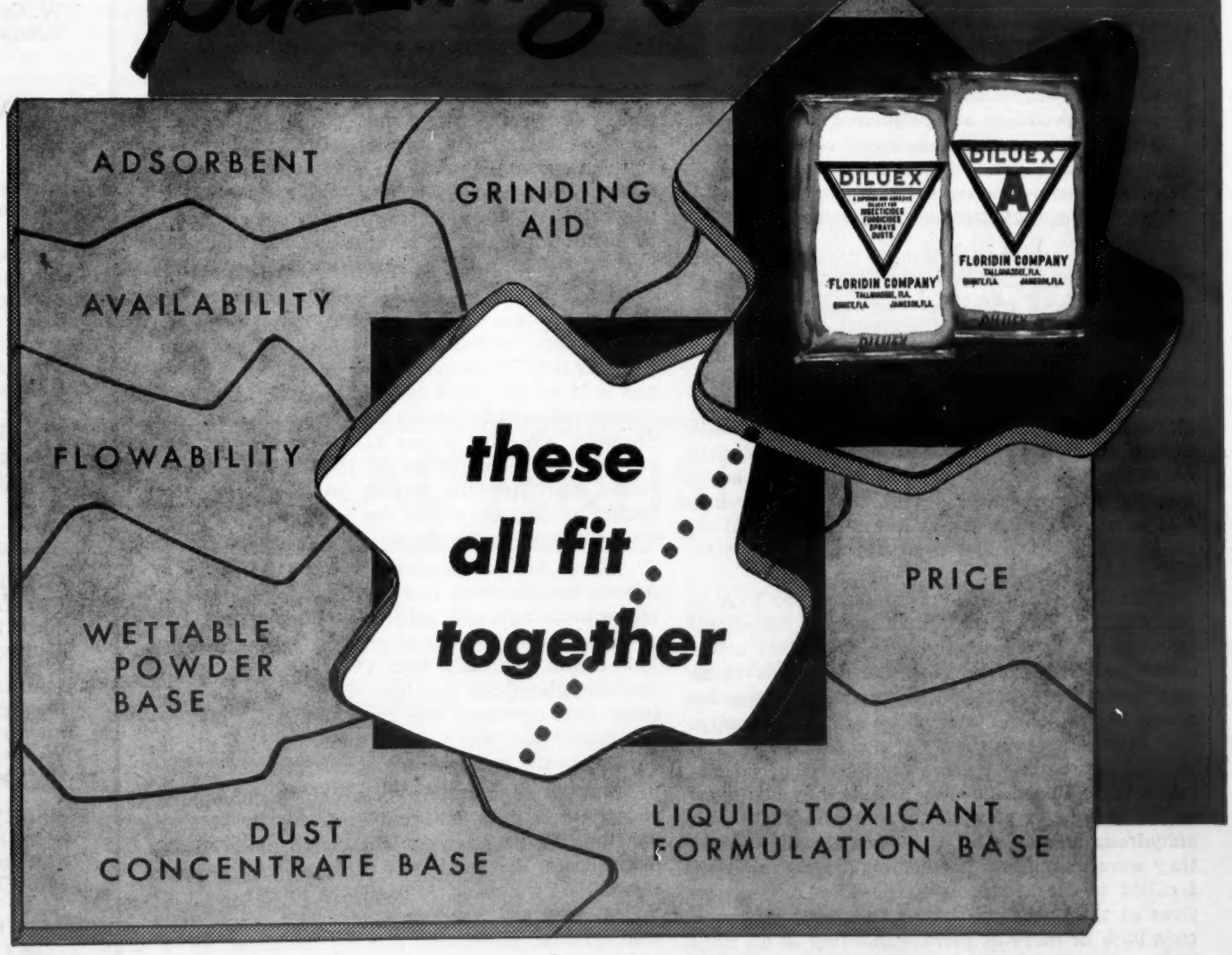
Even with the widespread, heavy numbers of hoppers that we have, effective and economical control can be had if operations are begun at once. Nothing short of a miracle will allow us to escape severe crop damage by ravaging hordes of hoppers if nature is allowed to take its course.

Some fields of alfalfa are being heavily damaged by adult clover leaf weevils feeding on the new growth. These adults are ¼ to ⅜ inch long, brownish to grayish, with a narrow, pale yellow stripe along the side margins of the wings. They are the adults of the green leaf weevil grub that eats the leaves of alfalfa and clovers in March and April. From all indications, 1 to 1½ ounces of dieldrin or 1½ pounds toxaphene per acre is giving control of this pest as well as grasshoppers. — Stirling Kyd and Geo. W. Thomas.

RESEARCHER TRANSFERRED

FAYETTEVILLE, ARK.—Dr. R. O. Thomas, who has been cooperative agent with the University of Arkansas Agronomy Dept. for seven years, has been transferred to the U.S. Cotton Field Station at Stoneville, Miss. At Arkansas, he devoted his time to research on cotton defoliation and cotton physiology.

PROCESSING TROUBLES puzzling you?



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VIEWPOINT

Richard E. Bennett Testifies About TVA

While many rumbles are heard throughout the fertilizer industry relative to competition of government-sponsored Tennessee Valley Authority fertilizer sales in many states, seldom does one run across a more potent or well-founded argument than that presented before the House Subcommittee on TVA Appropriations in Washington recently, by an industry representative.

Richard E. Bennett, president of Farm Fertilizers, Inc., Omaha, Neb., and of the Bennett Chemical Co., Denver, Colo., gave the Congressmen something to think about when he appeared before the subcommittee.

Mr. Bennett pulled no punches in picturing TVA as a "ruinous" competitor to the fertilizer industry, and termed as "bunk" and "applesauce," TVA's claims that its distribution is for experimental and educational purposes only. Actually, Mr. Bennett told the Congressmen, TVA is a "very substantial producer of phosphorus and nitrogen-bearing materials in direct competition with private enterprise at a price at which private enterprise cannot compete and TVA is doing this at the cost of the taxpayers."

That's the kind of testimony that packs a real bare-knuckled punch. And it was only a warm-up for Mr. Bennett, whose further declarations went as follows:

"When I heard in January of this year that the TVA was planning to go into production of diammonium phosphate on a commercial scale, and sell at a price which was ruinous to private industry, I called to the attention of the TVA that needs for diammonium phosphate were now being met by private industry, that the entering into this new production by TVA was not needed on an experimental basis, an educational basis or on any other basis. . . .

"We also called to the attention of the TVA at this meeting that if they produced and sold diammonium phosphate at the prices we had heard mentioned, it would be absolutely ruinous to us and would discourage rather than encourage the production of this material by private industry.

"At this meeting the TVA men practically told us that our costs were too high and that no one had a place in the industry, unless they manufactured their own phosphoric acid and their own anhydrous ammonia, at the same location where they were manufacturing diammonium phosphate. I called to the attention of the TVA representatives at this meeting, that if this were the case, then 95% or more of private industry in all lines had no business being in business, because there was only a very small per cent of any manufacturers who process all of their raw materials and pay no freight on any of them.

"Since this meeting in February, TVA has received protests probably running into the hundreds from congressmen, senators, fertilizer manufacturers, trade associations, the Hoover Commission, the Bureau of the Budget, Secretary of Agriculture Benson and Secretary of Commerce Weeks.

"These protests have called to the attention of the TVA that this is the first time TVA has ever manufactured a fertilizer which contains both nitrogen and phosphorus, [and] that industry knows how to produce diammonium phosphate and that sufficient agronomic research has been carried out to demonstrate its usefulness on crops. These protests have said that TVA's entering into this production would discourage this development by private industry.

"At a recent meeting of the Nebraska Fertilizer Institute . . . it was voted that the organization do everything in its power to bring to the attention of our Government the serious mistake that was being made in permitting TVA to go into further active competition with private enterprise.

"To all of these protests, TVA has turned a deaf ear and apparently it is determined to go ahead with this project in spite of these many protests.

"TVA has now started the production of diammonium phosphate in competition with existing private plants. They state that the production of these private enterprise plants in 1955 will be about 30,000 or 40,000 tons, and yet they have modified their own facilities to produce a capacity of 40,000 tons annually. When this capacity is utilized, TVA will be producing 50% or more of the entire domestic diammonium phosphate production. Amounts of this magnitude can hardly be considered 'experimental' or 'educational.'

"TVA also says that there is a potential market of 'several hundred thousand tons annually.' I do not agree with this so far as anything in the foreseeable future is concerned. No one can say what the market for this material might be ten, fifteen or twenty years from now, but the market for this material at present is very limited. About 12,000 tons of diammonium phosphate a year is what private industry is now selling. The potential market is considerably more than this, but to mention a figure of 'several hundred thousand tons yearly' is in our opinion, fantastic.

"I feel that the fertilizer industry can develop this market in a very satisfactory manner if they are not faced with this ruinous competition from TVA. This TVA competition is a hindrance to us and is in no manner a help. TVA is selling diammonium phosphate in bulk at $103.32 per ton f.o.b. Sheffield, Ala. This is just about exactly the cost to the private producers of the ingredients involved, providing the private producers have no freight to pay on either the phosphoric acid or the anhydrous ammonia.

"There are no locations in the U.S. where a private manufacturer can buy the two ingredients (phosphoric acid and anhydrous ammonia), without paying freight on one material or the other. This means definitely that TVA is selling diammonium phosphate for less than any manufacturer can purchase the raw materials, to say nothing of the many other items of cost which enter into the manufacture of this product.

"Our present selling price on diammonium phosphate in bags delivered to dealers is $146.00 per ton. TVA's price for this same material to distributors delivered all through the several states that we cover, is from $20 to $25 per ton under ours and we pay taxes. TVA says that diammonium phosphate can be produced by a commercial producer and sold at a price of $120 per ton, at a profit. We say and can prove without question, that no commercial producer of diammonium phosphate can sell at a price of $120 per ton and make a profit.

"A chart of TVA prices for diammonium phosphate delivered to various points in several states which our company serves, shows that in all cases TVA is delivering its diammonium phosphate to all points in our territory at from $16.68 per ton to $3.10 per ton under our costs.

"Again I say that their prices undersell us by from $20 to $25 per ton under the prices we must have in order to stay in business and that these prices if continued will break Bennett Chemical Company of Denver, Colo., and will keep Farm Fertilizers, Inc., of Omaha from manufacturing diammonium phosphate in Omaha and will discourage private enterprise from entering into the production of this fine material, rather than encourage them, as TVA says.

"I feel that the fertilizer industry can develop this market in a very satisfactory manner, if they are not faced with this ruinous competition from TVA. Again I say that TVA competition is a hindrance to us and is not a help."

CROPLIFE is a controlled circulation journal mailed to those responsible for the production and distribution of fertilizer and other farm chemicals and to retail dealers of the agricultural chemical industry in the U.S. To those not on the controlled list, CROPLIFE is available at $5 for one year, $9 for two years ($8 a year outside the U.S. and possessions). Single copy price, 25¢.

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ew Chemical Helps roduce Larger Grapes

BERKELEY, CAL.—A new chem-al, 4-chlorophenoxyacetic acid will responsible for producing larger hompson seedless and Black Corinth apes in California. Spraying the apes with this growth regulator s produced the larger grapes at a wer cost than girdling, according the reports of growers working th researchers of the University of alifornia. Robert J. Weaver, as-ciate viticulturist, has been con-ucting the experiments and believes e best time for spraying is after e fruit sets, when berry spatter s occurred.

NEW COUNTY AGENT

PITTSBURGH — Phil Sellers, for ne years associate county agent in eighboring Butler County, has re-laced Henry B. Ely, for 35 years ounty agent here. Mr. Ely retired ne 1.

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Entomologists Earn Commendation for Screw-Worm Project

WASHINGTON — Successful eradication of the screw-worm, a serious livestock pest, from the Caribbean island of Curacao by U.S. Department of Agriculture entomologists has been commended by the Netherlands Antilles government as a splendid example of research accomplishment and of international cooperation.

The success of this project sets the stage for a similar eradication effort against the screw-worm in the southeastern U.S. Eradication from Curacao was accomplished by saturating the wild, natural population of screw-worm flies with laboratory-reared male flies that had been made sterile from gamma-ray treatment. Mating between the sterile males and normal females resulted in production of infertile eggs. In less than a year, the insect was eradicated from the island.

The department and seven employees of its Agricultural Research Service, including B. T. Shaw, administrator, have received documents from A. A. M. Struycken, governor of the Netherlands Antilles, expressing that government's appreciation for their part in eradicating the insect pest. Others receiving documents (bearing the seal and the signature of the governor) were members of the Section of Insects Affecting Man and Animals, Entomology Research Branch, including A. W. Lindquist, section head, A. H. Baumhover, W. D. New, A. J. Graham, D. E. Hopkins and F. H. Dudley.

FERTILIZER STUDY

BERKELEY, CAL. — Applications of chemical fertilizers during the winter is a problem under study by the soils department of the University of California.

Guar, Blue Panicum Grass Make Headway In West Texas

LAMESA, TEXAS—Guar and blue panicum grass, two fairly new crops to West Texas, are making steady headway both as money-makers and soil builders. Guar has not yet paid off commercially as well as has cotton, though several farmers received as much from their guar seed as from grain sorghums. The main advantage of guar, say these growers, is that it is breaking up the hard pan that often develops just below plow depth.

Blue panicum not only breaks up the hard pan with its long hairlike roots, but has paid off handsomely when grazed by livestock. One farmer near Big Spring received over a hundred dollars per acre for seed harvested, and in addition grazed the field for several months.

Near McAdoo, Texas, L. S. Harvey sowed five acres to blue panicum last August and for the last two months has been grazing 60 head of cattle on the small irrigated field.

Blue panicum plantings have been increasing each year until now there are thousands of small fields on the South Plains. Thus far both guar and blue panicum have been free from insect damage.

Irrigation Helps Build Prosperity in West Texas

LUBBOCK, TEXAS — Irrigation has not only brought prosperity to West Texas, but in most irrigated areas the rural population has been increasing. In Lubbock County the number of farms has increased from 2,121 in 1945 to approximately 2,462 in 1955, according to county agent, Dave Sherrill.

Gross sales from farm products in the county jumped from 14 million dollars in 1944 to almost 40 million in 1955.

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Classified advertising rate not available for commercial advertising. Advertisements of new machinery, products and services accepted for insertion at minimum rate of $9 per column inch.
All Want Ads cash with order.

North Carolina Shipments

RALEIGH, N.C. — April fertilizer shipments in North Carolina totaled 451,785 tons, compared with 454,470 in April, 1954, according to the North Carolina Department of Agriculture. Shipments during the first 10 months (July-April) of this fiscal year total 1,541,752 tons, compared with 1,575,-243 tons during the corresponding period a year earlier.

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cme Fisher Div., Broadway Corp.....
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gricultural Chemical Equipment Co.....
llied Chemical & Dye Corp., General Chemical Division.....
llied Chemical & Dye Corp., Nitrogen Div..10, 11
merican Potash & Chemical Corp..... 19
nco Manufacturing & Supply Co.....
shcraft-Wilkinson Co..... 5
agpak Division, International Paper Co..... 18
aker, H. J., & Bro.....
aughman Manufacturing Co., Inc..... 20
eaird, J. B., Company.....
emis Bro. Bag Co..... 4
radley & Baker..... 23
roadway Rubber Corp.....
urkhardt-Larsen Co..... 16
urrows Equipment Co..... 23
utler Manufacturing Co.....
alcium Carbonate Co.....
alifornia Spray-Chemical Corp.....
ampbell, H. D., Co.....
hase Bag Co.....
hemical Specialties.....
hipman Chemical Co..... 16
lover Chemical Co.....
ommercial Solvents Corporation..... 7
roplife..... 24
eere & Co., Grand River Chemical Div.....
iamond Alkali Company..... 6
uane Agricultural Service.....
onco, Inc..... 15
ouglas Chemical Co.....
. I. Dupont de Nemours & Co., Inc.....
llsworth Equipment Co.....
xport Chemical Corp. of Colorado.....
Fischbein, Dave, Co.....
Floridin Company..... 21
Frontier Chemical Co.....
Gandrud, E. S., Co.....
Geigy Agricultural Chemical Co.....
General Chemical Division, Allied Chemical & Dye Corp.....
Gotcher Engineering & Mfg. Co.....
Grace Chemical Co.....
Grand River Chemical Div., Deere & Co.....
Hahn, Inc.....
Hammond Bag and Paper Co..... 17
Henderson Mfg. Co.....
Hercules Powder Co.....
Highway Equipment Co.....
Hills-McCanna Co.....
Hypro Engineering, Inc..... 15
International Minerals & Chemical Corp.....
International Paper Co., Bagpak Division..... 18
K. B. H. Corporation, The.....
Ketona Chemical Corporation.....
Kay Enterprises.....
Kraft Bag Corporation..... 2
Larvacide Products, Inc.....
Lion Oil Co.....
The Mackwin Co.....
Markley Laboratories, The.....
Wilson & George Meyer & Co.....
Michigan Chemical Corporation.....
Midstate Machinery Co.....
Naugatuck Chemical Div., U.S. Rubber Co.....
Nelson, Edward S., Ltd.....
Nitrogen Div., Allied Chemical & Dye Corp..10, 11
Northern Chemical Industries..... 20
Olin Mathieson Chemical Corporation, Insecticides Division.....
Pacific Coast Borax Co.....
Pacific Plastics Company.....
Pennsylvania Salt Manufacturing Company of Washington.....
Chas. Pfizer & Co., Inc.....
Phelps-Dodge Refining Corp.....
Phillips Chemical Company.....
Pittsburgh Coke & Chemical Company, Agricultural Chemicals Division.....
Potash Company of America.....
Poulsen Company.....
Powell, John, & Co., Inc.....
Private Brands, Inc..... 23
Rapids Machinery Co.....
Riverdale Chemical Co.....
Savage, K. E., Co.....
Schrock Fertilizer Service.....
Shell Chemical Corp.....
Sohio Chemical Co..... 12, 13
Specifide, Inc.....
Spencer Chemical Co..... 15
Spray Dust, Inc.....
Stoker, H. S., Company.....
Tennessee Corp..... 8
Thompson-Hayward Chemical Co..... 23
Umbaugh Agricultural Chemical Co.....
Union Bag and Paper Corp.....
United Petroleum Gas Co.....
U.S. Industrial Chemicals Co.....
United States Phosphoric Products Division Tennessee Corp..... 3
United States Potash Co.....
U.S. Rubber Co., Naugatuck Chemical Div.....
United States Steel Corp.....
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TO ADVERTISERS interested in the agricultural chemical industry this means, logically, that Croplife is a *MUST* medium for their advertising message. Keep your story up to date —give your customers the news and information about your products they need in the *week-to-week* operation of their business.

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